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USING TESTS IN THE MODERN SECONDARY SCHOOL

By

JOSEPH E. KING

Prepared for

THE NATIONAL ASSOCIATION OF SECONDARY-
SCHOOL PRINCIPALS

Under the editorial direction
of the
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THE NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS

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INTRODUCTION

THE teachers and principals of secondary schools have long manifested much interest in the improvement of testing programs; but recently there has been more concern than ever before. The tremendous emphasis placed upon testing by the armed services and the increased use of testing in the personnel programs of business, industry, and higher educational institutions have indicated anew the importance of a wide understanding of the underlying psychology and philosophy of modern tests, of the making of tests, and of a more comprehensive and practical use of the published tests that become available.

The ever-growing appreciation and recognition of guidance and of the extension of guidance services have brought new point to the use of testing. It is increasingly apparent that the modern guidance program must rest more firmly and accurately upon an adequate program of testing. And this means, if it means anything, a more comprehensive program—a program far in advance of that which now obtains in the typical secondary school.

It is the purpose of this report, however, to present only the testing problem, as nearly as it may be isolated. This specific purpose accordingly necessitates an emphasis on the objective results which testing produces as illustrated by the profile charts. The Committee's reports will often indicate that profiles are not absolutes; and that the counseling program should use additional subjective data and information.

The Committee on Testing wishes strongly to declare the need for the schools, and their representative agencies, to develop, first of all, the ways and means of testing which will best meet all of the various educational needs of school youth. The suitability of an individual for a particular job constitutes only one of the numerous needs. Other needs must be considered, in sharp contrast, by reason of the dominantly necessary attention given by business and industry, and by the private commercial test agencies, to the occupational phase.

It is easily realized that so much has been done in this area of occupational testing that, perhaps, the most usable testing materials and test interpretations, and certainly the largest test practice, are now to be found in this kind of testing. The public interest, too, supports this occupational concept of testing since individuals, chiefly in the interest of security, are eager to be told that they have a particular occupational opportunity.

Yet, the Committee hopes that its statement may sharpen the realization for a wider concept of test usage, including the use of tests to improve per-

sonality; study habits; reading techniques and skills; basic learning and applicatory skills in general; educational and occupational planning; analysis of career and job alternatives; of acquiring and understanding basic social, economic, civic, and moral values; self-evaluation; and group relationships.

It should be clear, too, that this wider concept of testing is necessary in order that the evil of educational or occupational determinism may be properly avoided, that the American principle of the self-evaluated choice may be maintained, and that intelligently made choices may merge from a thoroughgoing analysis of the available alternatives.

The difficulties and uncertainties in the use of tests, it appears, have recently become more marked, and the National Association of Secondary-School Principals has received many requests for a usable, professionally prepared brochure on testing.

It is the hope of the Association and of its Committee on Testing that this necessarily brief presentation may be of practical assistance to teachers, counselors, and administrators in the secondary schools. The Report is intended to be a ready reference on the underlying philosophy and psychology of modern testing, on the kinds of tests, on what tests may be used, on test elements and items, on how tests should be used, and for suggestions on the interpretations and use of test results.

In the work of the Committee, a survey has been made of the test literature in the secondary-school field; notices of the project with requests for the submission of field practices were distributed; and follow-up letters were sent to selected schools asking for details of test organization and usage.

An accomplished psychologist and technical expert in the field of test making and interpretation, Dr. Joseph E. King, who has been a staff member of the Department of Psychology of the Chicago Teachers College, a Clinical Psychologist for the University of Chicago Laboratory Schools, Aviation Psychologist for the AAF, Director of Research and Test Editor for Science Research Associates, and now Director of Industrial Psychology, was made a member of the Committee and assigned as the staff writer.

The responsibility of editing the manuscript and seeing it through the press was that of Walter E. Hess, Managing Editor for the National Association of Secondary-School Principals.

PART I

Why Test?

PSYCHOLOGICAL tests are no more mysterious than any other measuring instrument—the carpenter's rule, the doctor's thermometer, the everyday clocks and scales. Like any yardstick, the psychological test is a quick and reliable method to show how much of a certain mental trait this student possesses. We say, for example, this table is twenty-six inches long, this person has a temperature of 98 degrees, or this student has a Stanford-Binet I.Q. of 116. From such information, we are better able to predict and control future events.

STUDENT-CENTERED VIEWPOINT

Psychological tests give valuable information about the student's mental status. They give it quickly, reliably, and objectively. They furnish facts which provide a starting point to answer such questions about the student as:

Standing on each mental trait. Where does this student rank in the general population on each mental trait? Looking at his intelligences, interests, adjustments, and achievements individually, in what traits is he below-average; in what, average; in what, above-average?

His total profile. What are this student's strengths and weaknesses in terms of his total pattern of traits—traits which may be ascertained as additional to his test profile? Where are his high, average, and low points, for example, when his over-all profile is studied?

Society's requirements. Can the student become a well-informed citizen in terms of his pattern of traits? What remedial work is necessary to insure this primary goal of education? In what types of leisure activity will he enjoy himself most?

School placement. In terms of his profile, supplemented by such subjective material as may be available, where should he be placed in school? What type of curriculum will be most suitable for him? What methods of teaching will be most effective? What are the best administrative and supervisory policies to insure proper education of each student?

Career choice. What should this student's plans be for a career? For what occupational families is he best fitted in terms of his pattern of traits? What are the school courses related to these careers or to his profile? What are the possible alternatives in his career planning?

SCHOOL-CENTERED VIEWPOINT

Psychological tests also serve a second broad purpose in that they provide *in-training and self-evaluation for the educator*. The experiences of attempting to construct and interpret tests render insight into the objectives of education by forcing these objectives to be stated in terms of pupil behavior. Because of this, efforts directed toward the construction of tests by teachers are well worth the time spent if they are properly carried on, even though the end results may not be tests which meet all of the desirable criteria of published instruments.

The administrator and the teacher who know the potentialities and achievements of their student group are in a better position to set down and apply the policy-making decisions on educational objectives, curricula, methods, supervision, and other questions. Test scores of the student body, particularly those which are in the category of achievement tests, may give a factual basis for evaluating the philosophy and teaching policies of the secondary school. There are other factors, too, which need to be considered in the evaluation of a school. For example, the "Evaluative Criteria" as developed by the Co-operative Study of Secondary-School Standards uses a large number of criteria other than tests.

TESTS NOT A PANACEA

Psychological tests—today or even tomorrow—do not provide complete answers to the objectives stated above, nor are tests available to measure every aspect of the student's total personality. Tests are, however, a starting point for objective evaluation of the student and thus the school. They give indication of the student's strengths and weaknesses and may tell much about the student's several intelligences, interests, and present achievements; a little about his adjustments. They afford the educator a better understanding of the student's potentialities and shortcomings and offer a beginning in knowing the student and thus place the teacher in a position to assist in purposeful planning and guidance.

EDUCATION AND GUIDANCE

The secondary school attempts to educate students to take their proper place in society. It is designed to prepare the student for life as of today and later, by communicating to him the common learnings of the social

heritage, by educating him in the knowledges and skills he must have to meet the daily problems of living and by training him for a career. This experience should aid the student to understand himself and to develop his potential strengths and remedy his weaknesses so he may become an efficient and satisfied person both now and later. The right kind of school experience should guide him toward activities in which he is best fitted to succeed.

LIFE AND ITS PROBLEMS

As the student goes through school and later enters adult life, he meets various types of problem situations. These situations include duties of citizenship, job efficiency and satisfaction, courses in school, extracurricular activities, home adjustment, leisure pursuits, marriage, and the hundreds of other problems of living which must be met and solved.

While these activities are not often thought of as making demands, research is showing that each of them actually requires a certain pattern or mental traits and reactions for its successful performance. For example, the mathematics class makes different demands on the student than the workshop course; a clerical position requires a pattern of mental traits and responses distinct from that of the drill-press operator. (*See Chart 1.*)

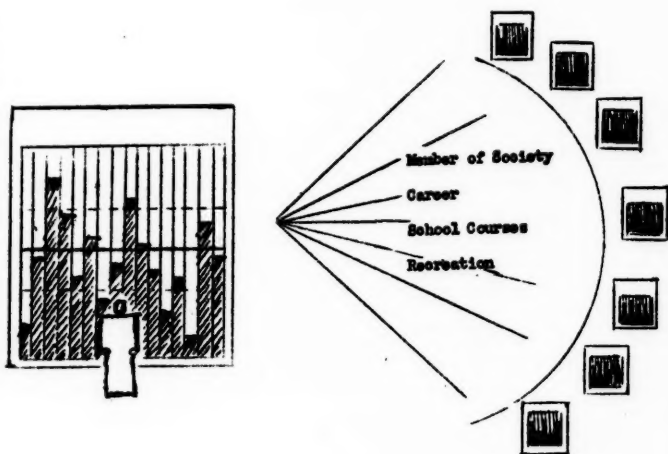
For the past ten years or more, psychologists have been focusing their attention on patterns of traits required for solving various types of problems. By both objective and subjective methods, they are isolating the several characteristics of mental abilities or intelligences, interests, adjustments, and achievements needed for successful planning and working in various types of activities. By knowing each bit of additional information which indicates how people vary in their personal characteristics, by knowing the pattern of traits required in given school courses and careers, and by charting the student's profile, the educator and the student are in a better position to plan ahead wisely.

THE STUDENT'S PROFILE

When the student enters secondary school, his pattern of traits is becoming comparatively stable. The chances are that he will not shift radically in his intelligences, interests, or modes of emotional adjustment from the age of fourteen to adulthood.¹ Thus his traits may be charted with some degree of accuracy. The more results are checked by duplicate testing and by the use of different test instruments, the greater the accuracy will be.

¹ Some psychologists and researchers in the field of mental and physical measurement call special potentialities, which appear in testing or through observation, aptitudes. Others name such potentialities intelligences. Such potentialities, regardless of the name given by different authors, are more constant over a four-year period than the personality factors; but they are still subject to change. (Editor)

CHART 1. THE STUDENT AND LIFE



Each student has his own individual profile of traits—his strengths and weaknesses, his individual differences. Not all of these factors can be charted. Both educator and student need to know more than the chart will show, but it is an important beginning.

Each situation which the student meets requires a certain pattern of these mental traits for its successful performance.

Education and guidance aid the student to "know himself"—his strengths and weaknesses. These forces should aid him to remedy weaknesses in those traits required for living with others. They should help him to choose those activities for which he is best fitted; in which he will have the greatest chance for success and satisfaction.

Psychological tests provide objective data which aid in finding out the student's strength and weaknesses. They are merely shortcuts to obtain a reliable index of the student's intelligences, interests, achievements, and adjustment. When supplemented by data from subjective sources, the student may the better study himself and engage in purposeful planning.

Before education and guidance can proceed with assurance, the student's mental profile should be drawn. The secondary-school educator who knows the student's strengths and weaknesses is in an excellent position to aid him in choosing activities in accord with his potentialities. The student can compare his profile with the requirements of the job families; he can select his school courses with primary emphasis on his mental strengths; he can choose activities which will improve his weaknesses and fit him for well-rounded living. By knowing himself and his potentialities, the student is better able to predict and control his future successes.

PLACE OF PSYCHOLOGICAL TESTS

Psychological tests are a means of obtaining objective evidence relating to the student's pattern of traits. They are shortcuts for obtaining a reliable index of the student's profile of strengths and weaknesses at the time of testing. They afford numerical descriptions of the student's intelligences, interests, adjustments, and achievements—ranking him as above, at, or below the average of the population as a whole, and indicating graphically his over-all strengths and weaknesses.² Using tests as a starting point—to be abetted by other objective methods of data collection—the educator comes to know the student; and the student begins to understand himself. Education and guidance are thus given direction and meaning.

² Intelligences as determined by tests should not be considered as constant; and such traits should not be charted for use over a considerable length of time without giving weight to the possible effect of new experiences on the individual. (Editor)

PART II

What Tests?

THE task of deciding what tests will be used in the guidance program is far from an easy one. The first question to consider is the number of areas to be measured. Will tests of intelligence, interest, adjustment, and achievement be used, or will only one or two of these general areas be sampled? Then, what specific tests will be used and how many will be administered?

GENERAL AREAS TO BE TESTED

Psychological tests fall roughly into four large groupings—tests of intelligence, interest, emotional adjustment, and achievement. Tests of intelligences include the well-known scholastic ability tests and tests of specific aptitudes. Interest inventories measure the student's likes and dislikes for activities in various fields. Measures of emotional adjustment indicate the student's reactions to life and personal problems. And tests of achievement measure educational and occupational skills.

The question as to the number of areas to be tested depends upon the size of the school test program. If the school plans to use only one test, this measure would probably sample the area of intelligence. If the program consists of two tests, probably one would measure intelligence and the other, interest. The areas may be ranked in order of student-centered importance as (1) intelligence, (2) interest, (3) achievement, and (4) adjustment. From the school-centered viewpoint of in-training and evaluation of teaching objectives, achievement tests rank nearer the top of the list of the four areas enumerated above.

Most educators find little difficulty in deciding the areas to be covered by the test program. The problem arises in choosing the specific tests to use.¹ The reason for this difficulty is not surprising. Some publishing companies plus scores of schools and private individuals have made available more than five thousand tests. A list of test publishers is given in Chart 2.

¹ Schools should be interested in the problems of attempting to construct measures of achievement in terms of behaviors which are peculiar to the local school philosophy and needs. (Editor)

CHART 2. TEST PUBLISHERS *

1. AMERICAN COUNCIL ON EDUCATION, 744 Jackson Place, Washington 6, D.C.
2. BUREAU OF EDUCATIONAL MEASUREMENTS, Kansas State Teachers College, Emporia, Kansas.
3. BUREAU OF EDUCATIONAL RESEARCH AND SERVICE, State University of Iowa, Iowa City, Iowa.
4. BUREAU OF PUBLICATIONS, TEACHERS COLLEGE, Columbia University, New York 27.
5. CALIFORNIA TEST BUREAU, 5917 Hollywood Boulevard, Los Angeles 28.
6. CENTER FOR PSYCHOLOGICAL SERVICE, George Washington University, Washington 6, D.C.
7. CO-OPERATIVE TEST SERVICE, 15 Amsterdam Avenue, New York 23.
8. EDUCATIONAL TEST BUREAU, 720 Washington Avenue, S.E., Minneapolis 14.
9. HOUGHTON MIFFLIN COMPANY, 2500 Prairie Avenue, Chicago 16.
10. INDUSTRIAL PSYCHOLOGY, 105 West Adams Street, Chicago 3.
11. McKNIGHT AND McKNIGHT, 109-11 W. Market Street, Bloomington, Illinois.
12. PSYCHOLOGICAL CORPORATION, 522 Fifth Avenue, New York 18.
13. PUBLIC SCHOOL PUBLISHING COMPANY, Bloomington, Illinois.
14. SCIENCE RESEARCH ASSOCIATES, 228 South Wabash Avenue, Chicago 4.
15. SHERIDAN SUPPLY COMPANY, P.O. Box 837, Beverly Hills, California.
16. STANFORD UNIVERSITY PRESS, Stanford University, California.
17. STOELTING COMPANY, 424 North Homan Avenue, Chicago 24.
18. UNIVERSITY OF MINNESOTA PRESS, Minneapolis 14.
19. WORLD BOOK COMPANY, 2126 Prairie Avenue, Chicago 16.
20. DR. KARL HOLZINGER, University of Chicago, Chicago

* Reference to publishers throughout the monograph is made by the index number as given in this chart.

The educator cannot hope to keep up with this literature and thus must rely on the judgment of test specialists to evaluate these materials for him and to aid him in selecting a program of tests. The remainder of Part II gives such an evaluation of current tests.

STANDARDS FOR CHOOSING TESTS

When more than one device is available for a certain purpose, it is necessary to evaluate these in some way. Thus, in deciding what tests will be used in the program, the educator should judge the available measures against a series of standards.

Trait measured. It is most important that the trait which is measured by the test be defined. Much progress has been made in the past ten years in defining traits measured by a test statistically. By comparing the statistical relations of a series of tests, it is now possible to indicate how many mental traits are being measured and how much of each is present in a certain test. The present trend is to use tests which measure a series of single traits—these traits being basic to mental behavior, significant, and independent of one another. In this way, the student's test profile becomes most meaningful and useful for education and guidance.

While the standard of a single trait is of foremost importance for tests of intelligence, interest, and emotional adjustment, achievement tests must be evaluated as to the trait measured on the basis of conformance with curricular objectives. Thus it may be desirable that an achievement test be complex in order to measure the variety of skills set down as desired outcomes of a given course of instruction.

Prediction of future success. The next standard of importance in selecting a program of tests is the predictability of the test. To say that a student is high, average, or low in terms of his test score means little—if we do not know what can be expected in terms of this standing. To be of use to the educator, the relationship between the trait measured and later success in life situations must be known. It is the predictability of the score that makes the test of value to the educator and to the student. And unfortunately, it is this very type of information that available tests most frequently fail to provide.

Consistent measurement. The student's standing on the trait must be consistent. He cannot be strong in the trait in January and weak in March. The test should sample an adequate amount of the behavior to be reliable from administration to administration. To insure this reliability, the test

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should be given under controlled conditions; and the scoring should be objective. The fact that a test is reliable does not mean that re-testing of the trait should not occur periodically.

Calibration. The student's standing in the trait must be expressed as a numerical score which can be located on a scale. In terms of his position on the scale, the student's score can be interpreted as high, above average, average, below average, or low. A comparable scale, such as the standard score, quotient, or percentile rank, should be used for all traits measured.

Standardization. The score made by the student should locate him in a certain population. He is strong or weak, high or low, or at some point in-between in the trait only as compared to a typical cross-section of a population similar to him in grade, age, sex, or other characteristic.

Length of testing period. Testing is an important part of education and guidance; but it can be allotted only a certain amount of time in the total program. Since the meaning of the student's profile or the predicting value of the test results increases as more traits are added, each test should be as short as reliability will allow. Each school will need to determine the maximum time which will be given to the program. In the clinical study of problem students, it may be advisable to use untimed or power tests; but for the school test program, short-timed tests are most appropriate since all of the pupils are occupied at the same time.

Ease of administration, scoring, and profiling. Psychological tests are not, basically, too complicated as measuring instruments. They can be designed for ease of administration, scoring, and profiling so that adults with training in education and psychology may learn to administer them without too much difficulty.

CHART 3. TEST AREAS AND STANDARDS

AREAS To Be Tested

1. INTELLIGENCE
2. INTEREST
3. ADJUSTMENT
4. ACHIEVEMENT

STANDARDS For Selecting Specific Tests

1. What trait is measured?
2. What activities does the test predict?
3. Is the test reliable?
4. Is the test calibrated?
5. Is the test standardized?
6. Is the test short?
7. Is the test easy to administer, score, and profile?

MEASURES OF INTELLIGENCE

During the early period of psychological testing, one score (such as the I.Q.) was used to express the student's intelligence or learning ability. In the 1930's, psychologists began to realize that one score did not adequately describe the various aspects of intellectual ability. They set out to replace the single-score test of general intelligence by measures which provided a series of scores. These early multiple-score tests of intelligence, however, often measured abilities which overlapped one another and did not cover all known aspects of intellectual behavior.

In the late 1930's, the psychometrists began to study available intelligence tests statistically—using a refined technique known as factor analysis. The factor research indicated that intelligence was made up of a number of component abilities basic to learning, significant and independent of one another.

CHART 4. THE EIGHT BASIC INTELLIGENCES

1. **COMPREHENSION.** The ability to understand words, ideas, other types of information.
2. **REASONING.** The ability to solve problems logically; to foresee and plan.
3. **NUMERICAL.** The ability to work with figures; to manipulate a system of symbols according to a given set of rules.
4. **FLUENCY.** The ability to use words with ease. The flow of words with little concern for their meaning.
5. **MEMORY.** The ability to recognize and recall associations of various kinds.
6. **VISUALIZATION.** The ability to perceive the sizes, shapes, and relations of objects in space; to think about objects in two and three dimensions; to manipulate objects in various positions mentally.
7. **PERCEPTUAL.** The ability to locate details quickly; to recognize likenesses and differences rapidly.
8. **CO-ORDINATION.** The ability for fine and gross muscle control; dexterity; co-ordination of the eye and hand.

The trend in intelligence testing today is toward the multiple-score tests measuring these basic or primary abilities. The *American Council on Education Psychological Examination* (1), *California Test of Mental Maturity* (5), *Differential Aptitude Tests* (12), *Factored Aptitude Series of Business and Industrial Tests* (10), *Guilford-Zimmerman Aptitude Survey* (15), *Holtinger Factorial Abilities Test* (20), *Nebraska Revision of Army Alpha* (15),

and *Thurstone Tests of Primary Mental Abilities* (1, 12, 14) indicate the current trend in the measurement of intelligence. So far, eight such basic abilities have been found, and it is in terms of these eight factors that the student's intelligence can best be described.

Verbal. Verbal intelligence is the ability to understand words and the ideas that lie behind them. Tests of vocabulary, general information, and reading comprehension are the purest measures of Verbal ability.

Verbal is important in such school courses as English, foreign language, business methods, history, science, and, particularly, in courses in an academic curriculum and at the college level. It is needed for success in careers, such as secretary, teacher, editor, scientist, librarian, office clerk, and executive, where the workers must comprehend language and deal with ideas and words. (See *Charts 5 and 6.*)

Verbal is the most prominent ability measured by tests of general intelligence. For example, the I.Q. obtained from the *Revised Stanford-Binet Scales* (9) is heavily loaded in Verbal intelligence. The single scores of the *Army Alpha* (12) and the *Army General Classification Test* (14), *Kuhlman-Anderson* (8), *Otis* (19), and *Terman-McNemar* (19) intelligence tests are principally measures of Verbal ability, though they also include other intelligences. Intelligence tests which give part scores usually afford a Verbal score—the linguistic score of the *American Council on Education Psychological Examination* (1), the vocabulary score of the *California Test of Mental Maturity* (5), the verbal score of the *Differential Aptitude Tests* (12), the verbal-comprehension score of the *Guilford-Zimmerman Aptitude Survey* (15), the verbal score of the *Holzinger Factorial Abilities Test* (20), the verbal score of the *Nebraska Revision of Army Alpha* (15), and the verbal-meaning score of the *Thurstone Tests of Primary Mental Abilities* (1, 12, 14). Most batteries measuring clerical aptitude include tests and usually a separate score of Verbal intelligence.

Since Verbal intelligence involves the understanding of information, there are specific Verbal abilities as well as the general trait. When the words used in the test are common terms experienced by most people in everyday living, *general* Verbal ability is measured. However, if the vocabulary is drawn from specialized fields (business, sales, science, mechanics, fine arts, and so on), a *specific* Verbal ability is measured. The *Michigan Vocabulary Profile* (19) is such a measure of specific Verbal intelligences in that it tests knowledge of words in the fields of human relations, commerce, government, physical science, biological science, mathematics, fine arts, and

CHART 5. VERBAL INTELLIGENCE

DEFINITION	TEST ITEMS	SCHOOL COURSES	CAREERS
Ability to understand words, ideas, other types of information.	(See Chart 6)	English	Author
	1. Vocabulary	Foreign languages	Editor
	2. Information	Literature	Executive
	3. Reading comprehension (sentences, stories, paragraphs)	Physical sciences	Librarian
		Reading	Office clerk
		Shorthand	Scientist
		Social studies	Secretary
	4. Specialized vocabulary		Teacher
	5. Technical information		

SPECIFIC TESTS

Single-Score Tests of General Intelligence (Verbal, mixed with Reasoning and Numerical)

Army Alpha and Revisions (12)
 Army General Classification Test (14)
 Cardall Practical Judgment (14)
 Detroit General Ability (13)
 Henmon-Nelson Tests of Mental Ability (9)
 Kuhlman Individual Tests of Mental Development (8)
 Kuhlman-Anderson Intelligence Tests (8)
 Moss Social Intelligence Test (6)
 Ohio State University Psychological Examination (14)
 Otis Group Intelligence Tests (19)
 Pintner General Ability Tests (19)
 Pressey Senior Classification and Verification Test (13)
 Purdue Adaptability Test (14)
 Stanford Revision of Binet Scales (9)
 Terman-McNemar Test of Mental Ability (19)
 Wechsler-Bellevue Intelligence Scale (12)

Part Score in Multi-Score Tests of Intelligence

American Council on Education Psychological Examination (Linguistic score) (1)
 California Test of Mental Maturity (Vocabulary score) (5)
 Differential Aptitude Tests (Verbal score) (12)
 Factored Aptitude Series of Business and Industrial Tests (Term scores) (10)
 Guilford-Zimmerman Aptitude Survey (Verbal Comprehension score) (15)

Continued at top of next page

- Holzinger Factorial Abilities Tests (Verbal score) (20)
 Nebraska Revision of Army Alpha (Verbal score) (15)
 Thurstone Primary Mental Abilities (Verbal-meaning score) (1, 12, 14)

Part Score in Clerical Batteries

- Detroit Clerical Aptitudes Examination (13)
 National Institute of Industrial Psychology Clerical Test (12)
 O'Rourke Clerical Aptitude Tests (12)
 Psychological Corporation General Clerical Test (12)
 SRA Clerical Aptitudes (14)
 Survey of Working Speed and Accuracy (5)
 Thurstone Examination in Clerical Work (19)

Tests of Reading Achievement (See Chart 23)

Specialized Vocabulary: Michigan Vocabulary Profile (19)

Technical Information: Mellenbruch (14), O'Rourke (12), Stenquist (19)

Mechanical Aptitude Tests

CHART 6. TYPICAL TEST ITEMS for VERBAL INTELLIGENCE

1. VOCABULARY

BIG means the same as: () small () few (X) large () size

A period for rest and recreation:

(X) vacation () work () summer () leisure

2. INFORMATION

Chicago is in: () Michigan () New York () Wisconsin (X) Illinois

3. READING COMPREHENSION (reading sentences, paragraphs, stories)

4. SPECIALIZED VOCABULARY (from fields of business, science, mechanics, etc.)

5. TECHNICAL INFORMATION (for example, tool knowledge)

LOOK AT THE PICTURE ON THE LEFT. DOES IT BELONG WITH (1), (2), (3), or (4)?

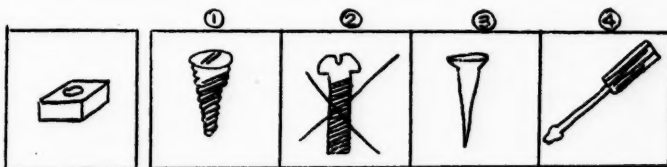


CHART 7. REASONING INTELLIGENCE

DEFINITION	TEST ITEMS	SCHOOL COURSES	CAREERS
Ability to solve problems, to think logically, to foresee and plan	(See Chart 8) 1. Number and letter series 2. Grouping 3. Analogies 4. Common sense	Advanced courses in all subject fields	Doctor Executive Inventor Lawyer Scientist Statesman Supervisor Teacher Other professional, administrative - supervisory, and scientific - technical careers

SPECIFIC TESTS

Single-Score Tests of General Intelligence (Reasoning mixed with Verbal and Numerical intelligences). See listing in Chart 5.

Part Scores in Multi-Score Tests of Intelligence

- California Test of Mental Maturity (Logical Reasoning score) (5)
- Differential Aptitude Tests (Abstract Reasoning score) (12)
- Guilford-Zimmerman Aptitude Survey (General Reasoning score) (15)
- Holzinger Factorial Abilities Tests (General score) (20)
- Nebraska Revision of Army Alpha (Relational score) (15)
- Thurstone Primary Mental Abilities (Reasoning score) (1, 12, 14)

Nonlanguage Tests of General Intelligence (Reasoning mixed with Visualization and Perceptual intelligences).

- Army Beta and Revisions (12)
- Chicago Non-Verbal Examination (12)
- Culture-Free Test (12)
- Pintner-Patterson Performance Tests (4)
- SRA Non-Verbal Form (14)

CHART 8. TYPICAL TEST ITEMS for REASONING

1. NUMBER and LETTER SERIES

The NEXT number is: 4 6 8 10 12 14 — () 15 (X) 16 () 17 () 18

The NEXT letter is: a x b x c x d x e x f x — (X) g () h () x () y

2. GROUPING

Which item does NOT BELONG in these groups?

(Words) (X) paper () pencil () typewriter () pen

(Letters) () CDEF () STUV (X) AXKW () LMNO

(Pictures)



3. ANALOGIES

DOLLAR is to CENT as DAY is to:

() month () calendar (X) hour () year

4. COMMON SENSE

We wear white clothes in summer because:

() They are easier to keep clean.

() We can buy them cheaper.

(X) They are cooler.

() We like to be in the sun.

sports. The Terms tests (Office, Sales, Mechanical, Scientific, Tools) in the *Factored Aptitude Series of Business and Industrial Tests* (10) are a similar example of specialized Verbal ability. Such technical vocabulary has been found related to interest in the field. Tests of reading skill, though classified under achievement, largely measure general Verbal ability or specific aspects of Verbal intelligence.

Another phase of Verbal ability is understanding of mechanical information. This is usually tested by knowledge of tools and machines, and is an important phase of mechanical aptitude. The *Stenquist* (19), *O'Rourke* (12), and *Mellenbruch* (14) mechanical aptitude tests are examples of tests of mechanical information.

Practically speaking, it is desirous that Verbal ability be indicated as a separate trait on the student's profile. If the Verbal score is to be pure—that is, indicate only the student's understanding of common words—the test from which this score is obtained must be one of word or sentence comprehension. Over-all scores from tests of general intelligence cannot be used since they intermix other abilities with Verbal. The best approach is to use a test which gives a single Verbal score or in which Verbal ability is measured in pure form by one of the part scores.

Reasoning. Of all the intelligences, Reasoning is probably the most significant in our society. Reasoning explains to a good extent why certain students are outstanding in school and certain men are leaders in their professions. They have the ability to attack problems, to figure them out correctly, and to solve them with accuracy and dispatch. Foresight and planning mark the man with high Reasoning intelligence. (See *Charts 7 and 8.*)

Tests to measure Reasoning ability have stressed both deduction (carrying out a series of steps in the reasoning process) and induction (discovering a rule in a series of items). Typical test items include number and letter series, grouping of words or objects, analogies, and common sense problems, as shown in Chart 8.

Reasoning is the second ability measured in tests of general intelligence. The scores from the majority of such tests, however, are complex in that they are made up of part Reasoning, part Verbal, and usually part Numerical. Most batteries of intelligence tests furnish a part score for Reasoning. The *Holzinger Factorial Abilities Tests* (20) provide a General score, which according to the bi-factor theory is the primary component of intelligence. The sub-tests making up this General score include series completion, deduction, and arithmetic problems.

Nonlanguage tests of general intelligence, such as the *Army Beta* and its Revisions (12) and *Chicago Non-Verbal Examination* (12), are likewise complex in that they usually include Perceptual and Visualization measures with the Reasoning.

The problem thus becomes similar to profiling the Verbal score: If the Reasoning score is to be pure (rule out all other abilities except Reasoning), the educator must scrutinize the tests making up the score to see that they measure induction or deduction; that they involve dealing with relationships between ideas, not just understanding of words or pictures.

Numerical. Numerical is the ability to work with figures—to manipulate systems similar to the number system. Numerical ability is apparently broader than just dealing with the number system. It involves the manipulation of any type of memorized system according to a set of rules. This would include alphabet symbols, file systems, codes, and rules of procedure or method. (See *Charts 9 and 10.*)

Numerical ability is important in such school courses as business arithmetic, accounting, bookkeeping, office procedures, and statistics. It is an aid to success in any occupation which involves skill in handling a memorized system, such as cashier, sales clerk, accountant, file clerk, bank teller, bookkeeper, and inventory clerk.

The best measure of Numerical intelligence is a test of simple arithmetical operations — addition, subtraction, multiplication, and division. Word problems in arithmetic have been shown statistically to include the Verbal and Reasoning factors along with Numerical ability. Thus an arithmetic word problem score is a complex score, and one never knows whether the student scores high (or low) because of Numerical, Verbal, or Reasoning ability. Such a complex score is of limited value in guidance, for the student's strengths and weaknesses must be known in the basic components of behavior before prediction can be meaningful.

If the educator desires the profile to reflect pure Numerical ability, he must obtain the score from a test of simple operations (addition, subtraction, multiplication, and division). A test of Numerical ability is usually contained in batteries of intelligence, clerical, mechanical, and even achievement tests.

Fluency. Fluency is related to Verbal intelligence in that both require the student to deal with words. While Verbal involves the *understanding* of language, Fluency requires the *use* of words with ease. The student who is high in Fluency is able to write and talk without searching for the right

CHART 9. NUMERICAL INTELLIGENCE

DEFINITION	TEST ITEMS	SCHOOL COURSES	CAREERS
Ability to work with figures, to manipulate a system of symbols by a given set of rules.	(See chart 10) 1. Addition, subtraction, multiplication, division 2. Arithmetic problems 3. Manipulating memorized systems 4. Dot counting	Accounting Arithmetic Bookkeeping Business arithmetic Business practices Mathematics Statistics	Accountant Bank teller Bookkeeper Cashier File clerk Inventory clerk Sales clerk Statistician

SPECIFIC TESTS

Single-Score Tests of General Intelligence (Numerical mixed with Verbal and Reasoning intelligences). See listing in Chart 5.

Part Score in Multi-Score Tests of Intelligence

American Council on Education Psychological Examination (Quantitative score) (1)

California Test of Mental Maturity (Number Reasoning score) (5)

Differential Aptitude Tests (Numerical score) (12)

Guilford-Zimmerman Aptitude Survey (Numerical Operations score) (15)

Nebraska Revision of Army Alpha (Computational score) (15)

Thurstone Primary Mental Abilities (Number score) (1, 12, 14)

Part Score in Clerical Batteries

See Listing in Chart 5.

Tests of Arithmetic Achievement

CHART 10. TYPICAL TEST ITEMS for NUMERICAL

1. ADDITION, SUBTRACTION, MULTIPLICATION, DIVISION

$$12+7+5= \quad () 23 \quad (X) 24 \quad () 25 \quad () 26$$

$$24-6+16= \quad () 24 \quad () 28 \quad () 32 \quad (X) 34$$

$$5 \times 9 - 7 = \quad (X) 38 \quad () 40 \quad () 42 \quad () 44$$

$$63 \div 9 + 16 = \quad () 21 \quad () 22 \quad (X) 23 \quad () 24$$

2. ARITHMETIC PROBLEMS (Comprehension and Reasoning intelligences in addition to Numerical)

Pencils are five cents each.

How much do six cost? $() 25c \quad (X) 30c \quad () 35c \quad () 40c$

3. ALPHABET MANIPULATION

Add one letter (Go one letter forward in the alphabet) to each letter in this word:

BUY (+1) (X) CVZ $() DUZ \quad () ATX \quad () CWZ$

4. DOT COUNTING

Which group has a DIFFERENT number of dots from the others?

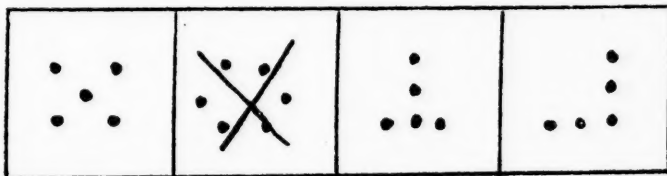


CHART 11. FLUENCY INTELLIGENCE

DEFINITION	TEST ITEMS	SCHOOL COURSES	CAREERS
Ability to use words with ease.	(See Chart 12)	Composition	Actor
Flow of words with little concern for their meaning.	1. Words beginning with given letter or letters	Debate	Comedian
	2. Words ending with given letter or letters	Journalism	Commentator
	3. Words in given categories (animals, food, flowers, etc.)	Public Speaking	Correspondence clerk
		Speech	Public relations man
			Reporter
			Salesman
			Secretary
			Writer

SPECIFIC TESTS

Thurstone Primary Mental Abilities (Word-fluency score) (1,12,14)

word to use. Individuals low in Fluency intelligence exhibit much blocking and groping for words in their use of language. (See Charts 11 and 12.)

Fluency is obviously an important ability in composition classes, public speaking, debate, speech, and journalism. It is an ability needed by the writer, salesman, comedian, reporter, public relations man, and in other occupations where words must flow readily and smoothly. Fluency appears to be an ability counterpart of sales interest.

Tests of Fluency or flow were first used by Dr. Charles Spearman, the British psychologist and one of the early researchers in the method of factor analysis. Dr. L. L. Thurstone of the University of Chicago has further developed the measure of Fluency ability. The tests he employs hark back to the free association methods, wherein the student writes down as many words as he can which begin with a certain letter such as "m," end with "tion," or fall in a certain class such as names of flowers.

Memory. Memory is the ability to recognize and recall associations—factual information, procedures or methods, names and faces, and other types of material. This type of intelligence is important in school courses where students are required to make associations. Good examples are foreign language courses and memorization of formulae in physical sciences. Many occupations require memory for varied types of material. (See Charts 13 and 14.)

CHART 12. TYPICAL TEST ITEMS for FLUENCY

1. WORDS BEGINNING WITH GIVEN LETTER OR LETTERS.

Write words beginning with "m":

- | | |
|---------|---------|
| mother | 3. |
| many | 4. |
| 1. | 5. |
| 2. | 6. |

2. WORDS ENDING WITH GIVEN LETTER OR LETTERS.

Write words ending in "able":

- | | |
|------------|---------|
| adjustable | 3. |
| capable | 4. |
| 1. | 5. |
| 2. | 6. |

3. WORDS IN GIVEN CATEGORY (for example, animals, food, flowers, etc.)

Write names of jobs:

- | | |
|----------|---------|
| clerk | 3. |
| salesman | 4. |
| 1. | 5. |
| 2. | 6. |

Memory ability is measured by tests of paired associates such as word-number or picture-word relationships, memorizing nonsense syllables, or recalling details about a picture or story. The *Stanford Revision of the Binet Test* (9) contains separate tests of Memory, but, since it affords only a single score, it does not differentiate this ability from the other components of intelligence. Moss includes a test for memory of names and faces in his *Social Intelligence Test* (6). Memory scores are available from the *California Test of Mental Maturity* (5), *Thurstone Primary Mental Abilities* (1, 12, 14), and *Factored Aptitude Series* (10).

Visualization. The sixth basic component of intelligence is Visualization. Visualization is the ability to perceive the sizes, shapes, and relations of objects in space. It involves thinking about objects in two and three dimensions, of manipulating them in various positions mentally. (See *Charts 15 and 16.*)

Visualization is important for classes in geometry, mechanical drawing, art, manual training, interior decoration, engineering, and geography. The artist, designer, electrician, pilot, engineer, and carpenter are typical of the workers who need ability to visualize objects in space. Visualization is probably the most important component in mechanical aptitude. (See *Charts 15 and 16.*)

CHART 13. MEMORY INTELLIGENCE

DEFINITION	TEST ITEMS	SCHOOL COURSES	CAREERS
Ability to recognize and recall associations of various kinds.	(See Chart 14) 1. Paired associates (word-number, word-picture, name, form-number) 2. Memory for stories, pictures, and so on	Foreign languages Mathematics Physical sciences Shorthand	Actor Administrator Diplomat Public relations man Salesman Store clerk Translator Writer

SPECIFIC TESTS

California Test of Mental Maturity (Memory score) (5)

Moss Social Intelligence Test (Memory for Names and Faces) (8)

Stanford Revision of Binet Scales (includes memory material but does not score separately) (9)

Thurstone Primary Mental Abilities (Memory score) (1,12, 14)

Many tests are available which tap Visualization intelligence—so many, in fact, that the unwary educator may be measuring Visualization in more than one form in his testing program. Duplicate measurements of the same trait, of course, are of little value. In addition to being time consuming and expensive, they give little additional information of value for guidance.

Tests of Visualization are generally pictorial. Typical Visualization items are shown in Chart 16. The *Stanford-Binet* contains the tasks of copying a diamond and paper folding. Group tests of Visualization include the *Bennett Mechanical Comprehension Test* (12), *MacQuarrie Test for Mechanical Ability* (5), *Revised Minnesota Paper Form Board* (12, 14), and *Surveys of Mechanical Insight* (5), *Object Visualization* (5), and *Space Relations Ability* (5). The multi-score batteries usually contain a test of Visualization—*California Test of Mental Maturity* (5), *Differential Aptitude Tests* (12), *Factored Aptitude Series* (10), *Guilford-Zimmerman Aptitude Survey* (15), *Holzinger Factorial Abilities Test* (20), and *Thurstone Primary Mental Abilities* (1, 12, 14). The *Army Beta* (12) contains many sub-tests of Visualization ability, as do the majority of other nonlanguage tests of general intelli-

CHART 14. TYPICAL TEST ITEMS for MEMORY

1. PAIRED ASSOCIATES (word-number, word-word, picture-name, form-number)

Memorize the number that goes with each name:

DESK	INKWELL	CHAIR
14	62	29
PENCIL	LAMP	DOOR
95	31	58

Mark the number that goes with each name:

LAMP	() 29	(X) 31	() 47	() 58
CHAIR	() 7	() 14	() 23	(X) 29
PENCIL	() 58	() 62	(X) 95	() 98

2. MEMORY FOR STORIES, PICTURES, and other types of material.

Remember the name that goes with each face.



Anne Morgan



James Stone



Dolores Cox



Richard Boyd

In the column at the right, mark the number for the correct answer (1, 2, 3, 4, or 5).



1. Barbara Scott
2. Dolores Cox
3. Mary Ellis
4. Peggy Hayes
5. Not shown



1. Frank Evans
2. James Stone
3. Philip Miller
4. Richard Boyd
5. Not shown



1. Anne Morgan
2. Anne Moore
3. Dolores Cox
4. Nancy Morgan
5. Not shown



1. James Stone
2. Richard Baker
3. Richard Boyd
4. Robert Boyd
5. Not shown

1. 2
2. 5
3. 1
4. 3

CHART 15. VISUALIZATION INTELLIGENCE

DEFINITION	TEST ITEMS	SCHOOL COURSES	CAREERS
Ability to perceive sizes, shapes, and relations of objects in space; to think about objects in two and three dimensions; to manipulate objects in various positions mentally.	(See Chart 16) 1. Rotated figures 2. Block counting 3. Form boards (paper and apparatus) 4. Surface development 5. Copying signs 6. Mechanical movements	Art Engineering Geography Geometry Interior decoration Manual training Mechanical drawing	Artist Blueprint reader Carpenter Designer Electrician Engineer Machine operator Pilot

SPECIFIC TESTS*Group Tests*

- Army General Classification Test (14)
- Bennet Mechanical Comprehension Test (12)
- California Test of Mental Maturity (Space Relations score) (5)
- Differential Aptitude Tests (Space Relations score) (12)
- Guilford-Zimmerman Aptitude Survey (Spatial Orientation and Spatial Visualization scores) (15)
- Holzinger Factorial Abilities Tests (Spatial score) (20)
- MacQuarrie Test for Mechanical Ability (5)
- Revised Minnesota Paper Form (12, 14)
- Survey of Mechanical Insight (5)
- Survey of Object Visualization (5)
- Survey of Space Relations Ability (5)
- Thurstone Primary Mental Abilities (Space score) (1, 12, 14)

Individual Tests

- Arthur Point Scale of Performance Tests, Revised Form II (12)
- Cornell-Coxe Performance Ability Scale (19)
- Crawford Spatial Relations Test (12)
- Kent-Shakow Form Boards (17)
- Kohs Block Design (17)
- Minnesota Spatial Relations Test (8)
- O'Connor Wiggly Blocks (17)
- Porteus Mazes (12)
- Stenquist Assembly Tests (17)

Nonlanguage Tests of General Intelligence

(Visualization mixed with Reasoning and Perceptual intelligences).

See Listing in Chart 7.

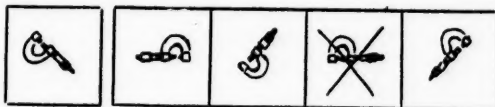
Part Score in Mechanical Batteries

- Prognostic Test of Mechanical Abilities (5)
- Detroit Mechanical Aptitudes Examination (13)
- SRA Mechanical Aptitudes (14)

CHART 16. TYPICAL TEST ITEMS for VISUALIZATION

1. ROTATED FIGURES

Look at the figure on the left. Which of the other figures is drawn BACKWARD?



2. BLOCK COUNTING

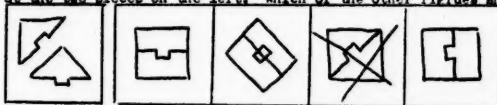
How many blocks?



☐ 7 ☐ 9 ☒ 10 ☐ 11

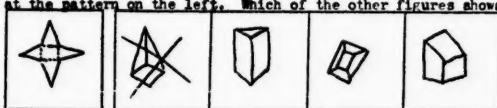
3. FORM BOARDS (paper or apparatus)

Look at the two pieces on the left. Which of the other figures shows them fitted together?



4. SURFACE DEVELOPMENT

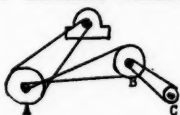
Look at the pattern on the left. Which of the other figures shows it folded up?



5. COPYING DESIGNS



6. MECHANICAL MOVEMENTS



What is direction pulleys are moving?

A ☒ ← ☐ →
 B ☐ ← ☒ →
 C ☐ ← ☒ →

CHART 17. PERCEPTUAL INTELLIGENCE

DEFINITION	TEST ITEMS	SCHOOL COURSES	CAREERS
Ability to locate details quickly; to recognize likenesses and differences rapidly.	(See Chart 18) 1. Comparison of names, numbers, other written material 2. Comparison of pictorial material 3. Cancellation	Foreign languages Office practice Science laboratory Shop courses Typing	Artist Craftsman File clerk Inspector Machine operator Mail carrier Proofreader Telephone operator

SPECIFIC TESTS

Differential Aptitude Tests (Clerical Speed and Accuracy score) (12)

Guilford-Zimmerman Aptitude Survey (Perceptual Speed score) (15)

Minnesota Clerical Test (12)

Thurstone Primary Mental Abilities (Perceptual Speed score) (1, 12)

Part Score in Clerical Batteries

See listing in Chart 5.

Part Score in Mechanical Batteries

See listing in Chart 15.

Separate Answer Sheets

gence. Batteries of tests of mechanical aptitude are weighted in Visualization ability.

Individual tests of Visualization include the *Cornell-Coxe Performance Ability Scale* (19), *Crawford Spatial Relations Test* (12), *Kent-Shakow Form Boards* (17), *Kohs Block Design* (17), *Minnesota Spatial Relations Test* (8), *O'Connor Wiggly Blocks* (17), *Porteus Mazes* (12), and *Stenquist Assembling Tests* (17). The *Arthur Point Scale of Performance Tests—Revised Form II* (12) includes the well-known Visualization tests of *Knox Cube*, *Sequin Form Board*, *Arthur Stencil Design*, *Porteus Mazes*, and *Healy Picture Completion*.

The fallacy of an individual test (given to one student at a time) for measuring Visualization ability is obvious. Individual tests are notorious for their time consumption, both of administrator and student. When a group test is available to measure the same ability, use of an individual test should not be considered.

Perceptual. Perceptual intelligence is the ability to locate details quickly—to recognize likenesses and differences very rapidly. Recent research

CHART 18. TYPICAL TEST ITEMS for PERCEPTUAL

1. COMPARISON OF NAMES, NUMBERS, or other written material

Pick out the answer which is EXACTLY THE SAME as the word or number in the box.

496 () 469 () 694 (X) 496 () 493

George C. James

- (X) George C. James () James C. George
() George C. Jones () George E. James

Machine Tool Co.
Chicago 3, Ill.

- () Machine Tool Inc. Chicago 3, Ill. () Machine Spool Co. Chicago 3, Ill.
() Machine Tool Co. Chicago 2, Ill. (X) Machine Tool Co. Chicago 3, Ill.

2. COMPARISON OF PICTORIAL MATERIAL

Look at the picture on the left. Which of the other four pictures is EXACTLY THE SAME?



3. CANCELLATION

How many letters e and n in this line?

yasgergnbzkevmcnuohwifjk () 2 () 3 (X) 4 () 5

CHART 19. CO-ORDINATION INTELLIGENCE

DEFINITION	TEST ITEMS	SCHOOL COURSES	CAREERS
Ability for fine and gross muscle control; dexterity; co-ordination of the eye and hand.	(See Chart 20)	Art	Artist
	1. Peg insertion	Athletics	Assembly-line worker
	2. Peg turning	Manual training	Bricklayer
	3. Nut-bolt manipulation	Mechanical drawing	Craftsman
	4. Hand-arm co-ordination	Shop courses	Electrician
	5. Training, tapping, dotting (paper-pencil)		Engineer
			Inventor
			Machine operator
			Mechanic
			Truck driver
			Typist

SPECIFIC TESTS

Bennett Hand-Tool Dexterity Test (12)

MacQuarrie Test for Mechanical Ability (Tracing, Tapping, Dotting scores) (5)

Minnesota Rate of Manipulation (8)

O'Connor Finger and Tweezer Dexterity (17)

Pennsylvania Bi-Manual Worksamples (8)

Purdue Pegboard (14)

indicated this intelligence as important in many situations. Perception is apparently an essential for success in both clerical and mechanical occupations. Any activity in which scanning and searching for detail is important is best performed by the individual high in Perceptual ability. (See Chart 17-18.)

Tests of Perceptual ability include comparison of names and numbers as in the *Minnesota Clerical Test* (12), cancellation tests, and nonlanguage tests of identical forms. The main aspect of the Perceptual test is the searching for detail which is usually embedded in irrelevant material. Separate answer sheets used with speed tests oftentimes introduce Perceptual intelligence into the measurement, and thus may bias the test score.

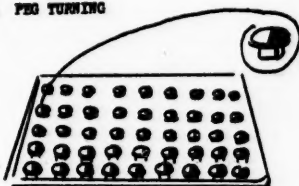
Co-ordination. Co-ordination is the ability for fine and large muscle control. It involves control of the eye and hand—dexterity with the fingers, hands, arms, and whole body. Co-ordination is important in school

CHART 20. TYPICAL METHODS for measuring COORDINATION

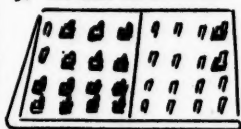
1. PEG INSERTION



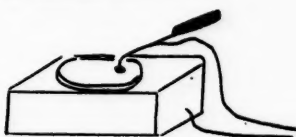
2. PEG TURNING



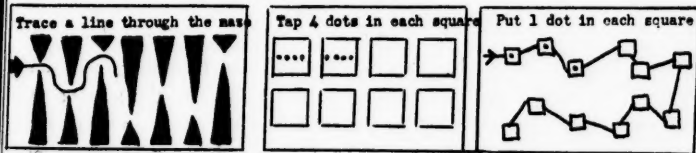
3. NUT-BOLT MANIPULATION



4. HAND-ARM COORDINATION



5. TRACING, TAPPING, DOTTING (paper-and-pencil)



courses, leisure activities, and careers which require skill in handling tools, operating machines, or otherwise controlling the muscles. (See Charts 19-20)

Co-ordination is the one ability that must be measured by a test involving apparatus and usually administered to one student at a time. It is measured by such tests as the *Bennett Hand-Tool Dexterity Test* (12), *Minnesota Rate of Manipulation* (8), *O'Connor Finger and Tweezer Dexterity* (17), *Pennsylvania Bi-Manual Worksample* (8), and *Purdue Pegboard* (14). Tests of tracing, tapping, and dotting, such as in the *MacQuarrie Test for Mechanical Ability* (5), seem to involve some aspect of Co-ordination ability.

SCHOOL PROGRAM IN INTELLIGENCE

These eight basic components of intelligence account fairly well for what is measured by tests labeled mental ability, clerical aptitude, mechanical adaptability, and other phases of aptitude and ability. In their present form, the scores of these tests are often difficult to translate into a profile of the eight basic intelligences. Since the school test program must contain a measure of intelligence, let us look at intelligence tests from a practical view.

One score for intelligence. While it is recommended that the student's profile show his standing on the eight basic intelligences, some schools will not wish to enter into testing this extensively.² (See Chart 21.)

A minimum program for testing intelligence would be one test which affords one score. Such a test would be the familiar test of general intelligence, usually requiring about a half hour to administer. Many tests of this type are available. The more well-known include the *Otis Group Intelligence Tests* (19), *Kuhlman-Anderson Intelligence Tests* (8), *Terman-McNemar Test of Mental Ability* (19), *Henman-Nelson Test of Mental Ability* (9), and others listed under single-score tests of general intelligence in Chart 5.

These tests furnish a single score which is usually a composite of the three intelligences of Verbal, Reasoning, and Numerical. The difficulty in their interpretation is that the contribution of the three components is unknown—students can make identical scores but for entirely different psychological reasons.

If the test program is confined to a single measure, the test of general intelligence is undoubtedly the answer. However, the educator must consider this as only a beginning, realizing the restriction that the single-score intelligence test places on an adequate program of guidance and supplementing this score by other information in planning the education of a student. If the program is to consist of testing in two areas, the second would either be achievement or interests. All three would be better.

The *Binet* test and its *Revisions* fall under the classification of a one-score test. While the score afforded by the *Binet* is much more representative of the eight intellectual abilities than is the case of the usual test of general intelligence, it still does not afford the profile of mental traits which is essential to adequate guidance.

² It would appear a better practice for school testing programs to be developed rather than installed. For the best counseling practice, the objective data should cover a variety of areas and should be double checked for accuracy. Several tests in each area, one serving as a check on the other, eliminate factors which may qualify the final scores. (Editor)

CHART 21. SCHOOL PROGRAMS for measuring the INTELLIGENCES

- **MINIMUM PROGRAM:** *Single-score test of general intelligence.*

Language type. Army Alpha and Revisions (12), Kuhlman-Anderson (8), Otis (19), Terman-McNemar (19), and others as listed in Chart 5.

Nonlanguage type. Army Beta and Revisions (12), Chicago Non-Verbal (12), SRA Non-Verbal (14), and others as listed in Chart 7.

- **AVERAGE PROGRAM:** *Multi-score test of the intelligences.*

American Council on Education (A.C.E.) Psychological Examination (1) or its short form the SRA Verbal (Thurstone Test of Mental Alertness) (14). Affords Linguistic, Quantitative, and Total scores. California Test of Mental Maturity (5). Affords Memory, Space relations, Logical reasoning, Number reasoning, and Vocabulary scores; Language and Nonlanguage scores; and Total score.

Differential Aptitude Tests (12). Affords Verbal reasoning, Numerical ability, Abstract reasoning, Space relations, Mechanical reasoning, Clerical speed and accuracy, and Language usage scores.

Factored Aptitude Series (10). Affords Comprehension (Office, Sales, Mechanical, Scientific, Tools), Reasoning (verbal Judgment, non-verbal Differences), Numbers, Perception (verbal Perception, non-verbal Precision), Fluency, Memory, Dimension, and Motor scores. Guilford-Zimmerman General Aptitude Survey (15). Affords Verbal comprehension, General reasoning, Numerical operations, Perceptual speed, Spatial orientation, Spatial visualization, and Mechanical knowledge scores.

Holzinger Factorial Abilities Test (20). Affords General Visibility, Verbal and Spatial scores.

Nebraska Revision of Army Alpha (15). Affords Verbal, Computational, and Relational scores.

Thurstone Primary Mental Ability (1, 12, 14). Affords Verbal-meaning, Word-fluency, Number, Reasoning, Space, Memory, and Perceptual-speed scores.

- **MAXIMUM PROGRAM:** *Score for each of eight basic intelligences.*

See listing of specific tests under each intelligence in charts.

The Verbal test of intelligence tends to discriminate against students with a reading disability or foreign language background. To take care of this problem in World War I, psychologists developed the *Army Beta* (12)—a nonverbal test in which the testee was not required to comprehend language. To obtain valid results with students having reading deficiencies, a similar approach should be used. Tests such as the *Beta* or its *Revisions* (12), *Chicago Non-Verbal Examination* (12), the nonlanguage section of the *California Test of Mental Maturity* (5), or the *SRA Non-Verbal Form* (14) afford scores of general intelligence unaffected by language weaknesses. The single score obtained from these tests is usually a complex one made up of Visualization, Perceptual, and Reasoning intelligences.

Multiple scores for intelligence. A number of test authors have now recognized the fact that more than one score is a necessity in a test of intelligence. Thus they have developed batteries of tests which yield from two to six sub-scores, in addition to a total score. While some authors have realized that sub-scores to be most useful must tap the basic intelligences and be independent of each other, the majority of authors have not. As yet no single battery of tests is available to measure all eight of the basic intelligences.

The Thurstone *American Council on Education Psychological Examination* (1) and its short edition, the *SRA Verbal Form (Thurstone Test of Mental Alertness)* (14), make provision for two scores: linguistic (a combination of Verbal and Reasoning abilities) and quantitative (Numerical and Reasoning abilities).

The *California Test of Mental Maturity* (5) measures five aspects of intelligence: memory, space relations, logical reasoning, number reasoning, and vocabulary. Separate scores are given for these five abilities, for language and nonlanguage intelligences, and for over-all learning aptitude.

A recently published test affording a series of scores is the *Differential Aptitude Tests* (12) of the Psychological Corporation. Seven aspects of intellectual ability are measured: verbal reasoning, numerical ability, abstract reasoning, space relations, mechanical reasoning, clerical speed and accuracy, and language usage.

A new approach to the use of tests for guidance and counseling is seen in the *Factored Aptitude Series of Business and Industrial Tests* (10). This *Series* measures eight basic factors by means of fourteen five-minute tests—fourteen tests being required to tap the various types of comprehension and

the verbal and nonverbal aspects of certain abilities such as reasoning and perception. The *Series* was developed and validated for business and industrial problems of personnel selection, placement, and promotion. Thus it has particular significance for course work and occupational guidance.

Another recent contribution in this area is the *Guilford-Zimmerman General Aptitude Survey* (15), which measures verbal comprehension, general reasoning, numerical operations, perceptual speed, spatial orientation, spatial visualization, and mechanical knowledge.

Guilford in his *Nebraska Revision of Army Alpha* (15) also provides separate scores for verbal, computational, and relational intelligences.

The latest of the multiple-score tests of intelligence is the *Holzinger Factorial Abilities Tests* (20), which has been developed on the bi-factor theory originally stated by Spearman. The Holzinger test measures general ability (considered to be the basic component of intellectual behavior), verbal ability, and visualization ability.

One of the outstanding contributions to multiple-score tests has been made by Drs. L. L. and Thelma Gwinn Thurstone of the University of Chicago. To be sure that they were measuring the basic abilities which were pure and unrelated to each other, the Thurstones have carried out experimental research for the past fifteen years throughout the age range from five years to adulthood. Their *Tests of Primary Mental Abilities* measure the seven basic intelligences of Verbal, Reasoning, Numerical, Fluency, Memory, Perceptual, and Visualization. Various editions of the tests are available, published by the American Council on Education (1), Psychological Corporation (12), and Science Research Associates (14).

Clerical batteries. While the same basic abilities are involved in intelligence, clerical, and mechanical test batteries, there has been a tendency on the part of authors to group a series of tests together and label them clerical or mechanical aptitude.

Research of the past ten years has indicated that clerical aptitude is made up of three of the basic intelligences: Perceptual, Verbal, and Numerical. The majority of clerical batteries draw their tests from these three areas, but unfortunately rarely measure the abilities in pure form.

The *Psychological Corporation General Clerical Test* (12) is a recent example of the typical clerical aptitude test. It has nine sections: comparing, filing, arithmetic, addition, arithmetic problems, spelling, paragraph comprehension, vocabulary, and grammatical errors. In addition to nine part

scores, three sub-total scores are obtained: Clerical aptitude or Perceptual (Tests 1 and 2), proficiency in mathematics or Numerical (Tests 3, 4, and 5), and Verbal facility or Verbal (Tests 6, 7, 8, and 9). A total score reflects general clerical aptitude.

Other clerical tests follow similar patterns of abilities measured. These include the *Detroit Clerical Aptitude Test* (13), *National Institute of Industrial Psychology Clerical Test* (12), *O'Rourke Clerical Aptitudes Test* (12), *SRA Clerical Aptitudes* (14), *Survey of Working Speed and Accuracy* (5), and *Thurstone Examination in Clerical Work* (19).

Mechanical batteries. While mechanical aptitude has still not been completely delimited, present knowledge indicates it to consist of four of the basic intelligences: Visualization, Perceptual, Co-ordination, and Mechanical information (described under Verbal). Since the majority of mechanical workers deal with tools, machines, and other devices which do not involve language, the mechanical abilities are best measured by nonlanguage tests.

Visualization ability meets the nonverbal standard in that most group tests of this ability involve the manipulation of pictorial material. Checking similarities and differences in pictorial material is probably a more adequate measure of Perceptual ability as required of the mechanical aspirant than is comparison of names and numbers. Co-ordination tests are all nonverbal in nature. Mechanical information can be measured without requiring reading skill of the student, as in matching parts of tools or machines. Reasoning ability, indicative of future success in the hierarchy of mechanical jobs, can likewise be tapped by nonverbal tests of the *Army Beta* type. Many tests of mechanical aptitude, however, do not meet this nonverbal standard.

The nonlanguage aspect of mental testing cannot be over-emphasized, particularly for students in trade schools, from foreign backgrounds, or otherwise handicapped in language skills. Use of verbal tests for such boys and girls results in a spurious measure of the trait being tested. Thus, if any reading disability is present, nonlanguage measures of Reasoning, Numerical, Memory, Visualization, Perceptual, and Co-ordination must be used. Similarly, if the student is preparing for a career in fields where language is not an essential part of the work, his success can best be predicted by tests not involving Verbal intelligence.

Other intelligence batteries. An analysis of tests used in other types of aptitude or ability batteries shows that they are again combinations of the eight basic intelligences. Examples include the teaching, engineering and

physical science, scientific, social intelligence, sales, medical, and other batteries of aptitude tests. Art and musical aptitude tests likewise sample aspects of the basic intelligences. Many of these specialized batteries include measures of skill and specific aspects of the basic abilities.

MEASURES OF INTEREST

The second major area to be investigated in the testing program is that of interest. An interest inventory measures the student's likes-dislikes or preferences-distastes for certain types of activities. While tests of intelligence sample the *ability* aspects of the student's potential, measures of interest disclose his *motivations*. For full success in meeting life's problems, the student must have both intelligence and interest. Ability without motivation decreases his chances of solving given problems successfully. Oddly enough, however, most studies show that intelligence in a given area does not guarantee interest in that area; and *vice versa*, preferences for certain activities do not necessarily mean ability to learn them. Thus it is essential that the student's interests, in addition to his intelligences, be known.

Interest questions. The questions in an interest inventory usually ask the student to indicate his like, dislike, or indifference toward a certain activity. They may be phrased as a single preference, like this:

LIKE INDIFFERENT DISLIKE

Repair a broken machine ☐ ☐ ☐

Or as a comparison of two or three activities with each other, like this:

LIKE MOST LIKE LEAST

Sell magazine subscriptions ☐ ☐

Read a book ☐ ☐

Repair a broken machine ☐ ☐

The content of interest inventories varies. Some inventories list actual job or school subjects in the questions; some give descriptions of the work procedures; and others present situations related to the jobs or courses which are in the student's scope of experience. The last type of question is probably a better indicator of preference in that interest is being measured rather than information. Should the student be unable to understand or comprehend the questions asked in the inventory, a true measure of his interest will not be obtained.

The usual time required for the student to take the inventory is thirty to forty minutes, and from six to ten scores are obtained. While this testing time, as compared to the score information received, more than meets the desired standard, interest inventories are notoriously difficult to score.

Score information. Two types of score information are given by current interest inventories. There are scores for *specific occupations*, as in the *Strong Vocational Interest Blank* (16); and scores for *interest areas*, as in the *Kuder Preference Record* (14). The *Strong Blank*, for example, provides scores for forty-seven specific occupations, including artist, psychologist, architect, physician, engineer, chemist, farmer, carpenter, personnel manager, musician, accountant, life insurance salesman, and others. The *Kuder Record* shows the student's standing in nine general areas of interest: mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, and clerical. The majority of current interest inventories follow the occupational area scoring method; and such scores are perhaps more applicable to the high-school guidance situation where the student is usually choosing a vocational field rather than a specific career.

Interest areas. An analysis of current interest inventories shows them to provide measures of the student's likes and dislikes in eight broad areas:

Scientific-technical	Literary
Business	Aesthetic
Sales	Mechanical
People	Natural

Types of activities common to each of these areas, related school courses and careers, the intelligences necessary to supplement interest for success in each area, and specific inventories providing a score in the various areas are summarized in Chart 22. These eight interest areas give a fairly complete coverage of activities in our society with the exception of "homemaking." Only one current inventory indicates preference for activities of this type.

In addition to inventories measuring interest in occupational areas, a few inventories have been published to indicate academic preferences. The *Dunlap Academic Preference Blank* (19) measures interest in ten academic areas. The *Garretson-Symonds Interest Questionnaire for High-School Students* (Columbia University Press) provides scores of academic, technical, and commercial course preferences. And the recent *Gregory Academic Interest Inventory* (15) measures interest in twenty-eight senior high-school and college subjects.

Another type of test which may be classified in the preference area is the attitude scale, which ranks students according to their viewpoints toward racial groups, religions, advertising, and other topics. The *Remmers Attitude Scales* (12) and *Thurstone Attitude Scales* (University of Chicago Press) are examples of instruments developed in this area.

CHART 22. MEASURES OF INTEREST

AREAS	DEFINITION	SCHOOL COURSES	CAREERS	RELEVANT INTELLIGENCE	SPECIFIC INVENTORIES*
SCIENTIFIC-TECHNICAL	Interest in chemistry, biology, medicine, psychology, other physical, biological, and social sciences	Biology Chemistry General Science Mathematics	Biologist Chemist Criminologist Endocrinologist Physician Research Man Social Scientist	Reasoning Comprehension Verbal Numerical	Kuder Lee-Thorp Muller-Glasser Thurstone
BUSINESS	Interest in commercial affairs — business administration, office procedures, clerical work	Accounting Bookkeeping Business English Commercial Law Typing	Accountant Clerk Executive Financial Man Inspector Secretary Superintendent	Perceptual Comprehension Verbal Numerical	Allport-Vernon Kuder Lee-Thorp Muller-Glasser Thurstone
SALES	Interest in convincing people, selling, meeting people	Advertising Debate Economics English Psychology Salesmanship	Advertising Man Lawyer Diplomat Executive Public Addresser Salesman	Fluency Memory Comprehension	Cleason Kuder Thurstone
PEOPLE	Interest in helping people	Civics Education History Mental Hygiene Public Speaking Psychology Social Utility	Care Worker Consider Nurse Personal Man Teacher	Comprehension Fluency Memory	Allport-Vernon Kuder Lee-Thorp Muller-Glasser Thurstone
LITERARY	Interest in reading, writing, story telling, reporting	Creative Writing Drama English Fiction History Journalism Public Speaking Social Utility	Actor Author Editor Reporter Journalist Teacher	Comprehension Fluency Reasoning	Allport-Vernon Kuder Lee-Thorp Thurstone
ÆSTHETIC	Interest in art, music, and other fine arts	Art Drama Music Painting Poetry Sculpture Literature	Architect Artist Composer Designer Musician Painter Sculptor	Visualization Perceptual Comprehension Verbal Numerical	Kuder Lee-Thorp Muller-Glasser Thurstone
MECHANICAL	Interest in operating machines, working with tools, repairing equipment, designing and building	Blueprinting Electricity Mechanical Drawing Physics Shop Tool Work	Blueprinter Charterer Engineer Fitter Inspector Machine Worker Tool Maker	Visualization Perceptual Comprehension Verbal Numerical	Kuder Lee-Thorp Thurstone
NATURAL	Interest in working with nature	Agriculture Botany Ecology Entomology Fishery Forestry Horticulture Zoology	Animal Breeder Botanist Farmer Fisherman Forester Horticulturist Zoologist	Comprehension Perceptual Verbal Numerical	Kuder Lee-Thorp Thurstone
*SPECIFIC INVENTORIES:					• Allport-Vernon Study of Values (9) • Brainard Occupational Preference Inventory (12) • Cardall Primary Business Interests (14) • Cleason Vocational Interest Inventory (11) • Country Vocational Inventory (8) • G-5-2 Interest Survey (15)

Interest program. If the school program is to include other than intelligence tests, an interest inventory provides worth-while information for guidance purposes. Unlike the eight basic intelligences, each of which requires a single test, the interests are measured by one inventory and in a relatively short time period. In order of guidance importance, it is more advantageous to know the student's intelligences than his interests. A school should reach at least an average program of intelligence testing (a multiple-score test of general intelligence, as shown in Chart 21) before an interest inventory is added to the program.

MEASURES OF ADJUSTMENT

The first requirement to be met by a psychological test is that of adequate definition of the trait being measured. This standard is best met by tests of intelligence in that many years of research have been spent in isolating abilities which are basic to mental behavior, significant, independent, and describable. The eight interests also meet this standard satisfactorily. Intelligence tests and interest inventories were also found to be useful in predicting later success in solving life's problems—the second standard of importance in selecting a program of tests.

Measures of emotional adjustment do not meet these two standards as well as do tests of intelligence and interest. Though measurement of adjustment to life's problems dates back to Woodworth's studies in World War I with the *Personal Data Sheet* (16), psychologists have not as yet isolated the basic components of emotional adjustment. In fact, there is little statistical or even subjective agreement as to what traits are being tapped by tests of adjustment, and present instruments have not shown themselves to be valid predictors of later success in school courses or careers. Thus while measures of adjustment will be briefly discussed, it is not recommended that they be included in the testing program—unless the school is research-minded and is staffed to study the results of emotional measures.

There are numerous approaches to the study of emotional behavior. These include physiological measurement, free association and projective techniques, rating scales, questionnaires, interviewing, and others. A word may be said about each of these methods.

Physiological measures. In an emotional situation, certain physiological changes occur which can be measured. These include blood pressure, pulse rate, amplitude of breathing, palm sweating, and others. In general, studies show these visceral-muscular changes to be indicative of only one phase of emotional adjustment and not predictive of later success or failure in life

situations. In addition, the complexity of the measuring apparatus rules out the physiological method in the guidance program.

Free association and projective techniques. A second approach to the measurement of emotional adjustment is that of free association and projection. As in the *Kent-Rosanoff Free Association Test* (17), the subject may be read a list of words and told to respond to each word with the first word that comes to his mind. His speed and type of response are noted, and a score is given to indicate deviation from the normal. Projective techniques, as illustrated by the *Rorschach Ink Blot Test* (12) or *Murray Thematic Apperception Test* (12), also involve a free association. For example, the subject may be shown an ink blot and asked to tell what he sees. Again his emotional adjustment is judged by comparing his responses to a norm. Like the physiological measures of emotional adjustment, the free association and projective techniques are clinical tools, requiring trained personnel to administer and interpret them—and best confined to clinical studies of serious adjustment problems.

Rating scales. The rating scale is a method which has long been used to indicate student adjustment. It involves a judgment as to where the student stands on a scale in regard to a certain trait. The majority of research studies have indicated rating scales to be both unreliable and invalid. Little consistency among raters or even between two ratings by the same person has been found. Traits rated are usually not well defined and tend to be too broad in scope (e.g. maturity, co-operation, industry, emotional control, social adjustment, and so on). Many traits on the scale overlap with other traits. The "halo" effect operates in that the traits are not separated in the mind of the rater, and a good or poor rating on one trait will be reflected in other, even unrelated, traits.

Even with these deficiencies, however, the rating scale is a method of quantifying information about the student and may thus be of value in the guidance program. When ratings are used, care should be taken to rate on definite, independent, and significant traits, to train the raters, and to use a number of raters who have been associated with the student in various types of activities. Published rating scales include the *American Council on Education Personality Rating Scale* (1), *Freeman-Kawin Teacher Rating Scales for Pupil Adjustment* (University of Chicago Press), *Haggerty-Olson-Wickman Behavior Rating Schedules* (19), and *Vineland Social Maturity Scale* (8). Somewhat similar to rating scales are the anecdotal records and behavior descriptions. This is a method to provide a record of the student's

outstanding achievements and deficiencies as noted in his everyday performances. The teacher records these observations briefly and concretely and this notation is placed in the student's permanent folder. Such notes are often useful to the counselor, providing they do not reflect an occurrence which appears only every decade and thus would be of little value for practical prediction.

Questionnaires. The emotional adjustment questionnaire usually asks the student to answer Yes, No, or ? to questions such as these: "Do you day-dream frequently?" "Are you troubled with fears of being crushed in a crowd?" "Are you slow in making decisions?" "Have you frequently been depressed because of low marks in school?"

The problem is whether the student *can* (he may not understand the question) and *will* (he may not care to reveal his inner self) answer the questions honestly.

The best use of the adjustment questionnaire—in fact of all current measures of emotional adjustment—is to locate the extremely maladjusted student (adjustment being defined by the questionnaire) and follow up such cases by individual counseling and therapy.

Like measures of Intelligence, a number of adjustment questionnaires afford only one over-all score and measure what might be called "general emotional adjustment." These types of questionnaires stem from the original *Woodworth Personal Data Sheet* (16) and the later *Thurstone Personality Schedule* (University of Chicago Press).

About 1930, psychologists began to develop the multiple-score type of adjustment questionnaire. The *Bernreuter-Flanagan Personality Inventory* (16) is an example in that six scores are obtained—neurotic tendency, self-sufficiency, introversion-extroversion, dominance-submission, sociability, and confidence. While this inventory provides six scores, they are by no means independent: neurotic tendency, introversion-extroversion, and confidence overlap one another; the sociability and confidence scores, developed in Flanagan's factor analysis of the inventory, account for the four original Bernreuter scores. The measure thus fails to meet the standard of independence among the part scores, and few studies have indicated it to have predictive value for later activities in which the student engages.

This same situation is common to other multiple-score personality tests, including the *Adams Personal Audit* (14), *Bell Adjustment Inventory* (16), *California Mental Health Analysis* (5), *Minnesota Personality Scale* (12), *Washburne Social-Adjustment Inventory* (19), and others. Two current

questionnaires labeling the traits they measure in psychiatric terms are the *Minnesota Multiphasic Personality Inventory* (12) and the *Humm-Wadsworth Temperament Scale* (12). They purport to measure such adjustments as tendency toward hysteroid, cycloid, schizoid, paranoid, and so on.

A few emotional traits have been isolated which approach the definition of a basic factor. Extroversion (the tendency to be with people and work with others) appears to be such a basic adjustment trait. It is measured by the *Guilford STDCR* (15), *Neymann-Kohlstedt I-E* (7), and *Minnesota T-S-E* (14). Similarly, the trait of ascendance (the tendency to take the lead in a group, to dominate the situation, and to be in the limelight) appears to be a primary factor. It is measured by such tests as the *Guilford GAMIN* (15) and *Allport A-S Reaction Study* (9).

Interviewing. Another method, and probably the most widely used for ascertaining a student's adjustment, is the interview. The interview is a clinical tool, and is a modified version of its forerunner, the psychiatric interview. The interview to evaluate student adjustment should not be confused with the counseling and other types of interview, in which the student is given information or led to think about his problems.

Like the rating scale and behavior description, the interview suffers from the subjective approach with accompanying lack of reliability and validity. Little consistency has been found among different interviewers' reports on the same student, and in many cases the recorded observations have little practical application. The standardized interview, following a definite set of questions, holds some possibility for improving the reliability of the interview, but in general this method deviates to a good extent from the standards required of a scientific measuring instrument.

Adjustment program. The guidance program is thus given little assistance by current measures in the area of emotional adjustment. This situation is highly lamentable, because of the importance of the emotional component of personality in school, career, and other situations which the student must face. Much research remains to be carried out in this area before the educator has practical tools with which to work. The basic emotional traits are only partially known at present; few valid predictors of adjustment to life situations have been isolated; and the reliability of many of the methods currently being used is questionable. Again it is stated that, unless a school has a complete testing program in the areas of intelligence, interest, and achievement, the emotional area should not be covered. The few

schools in such a category may well carry out some of the basic research so vitally needed in this area.

In order that the over-all profile of student traits may be complete, five aspects of emotional adjustment will be added to the eight intelligences and eight interests. These are:

Extroversion. Tendency to be with people and to work with others.

Ascendence. Tendency to take the lead in a group, to dominate the situation, to be in the limelight.

Stability. Tendency to adjust to problems easily, to be calm, to exercise self-control.

Drive. Tendency toward physical and mental stamina, "stick-to-it-iveness," initiative.

Self-reliance. Tendency to arrive at one's own decisions with assurance and self-confidence.

MEASURES OF ACHIEVEMENT

Achievement or skill is a counterpart of intelligence. While tests of intelligence measure the student's potential, tests of achievement assess his actual performance or skill. In general, if all other things are equal (the student has average or above average interest, no extreme emotional problems, good teaching methods, and so on), his rank on an achievement test should be near his rank on its intelligence counterparts. The student who is high in Verbal and Perceptual intelligences, for example, usually shows high reading achievement. The student who is low in Number ability is usually also low in arithmetic achievement.

The achievement test is usually a complex measure in that performance or skill is complex—in fact, the more aspects of achievement which can be tapped by the test, the better. The achievement test should indicate how well students measure up to the desired outcomes of the course of study. Because of this complexity, achievement test selection has a dual implication: First, the content of the achievement measures must be evaluated to see that they are measuring the desired objectives of education; in so doing, the school may find it advisable to supplement published tests by other self-developed measures to provide a complete coverage. Second, by such an evaluation of current methods, the educator can increase his insight about course objectives, the outcomes of which should be measurable and in accord with the aims of secondary education.

The majority of the test publishing companies offer both a *battery* of achievement tests and *single* achievement tests in the more important fields.

Achievement tests are available to measure specific subject matter (grammar, arithmetic, biology, and so on) and subject-matter areas (natural sciences, quantitative thinking, understanding of social concepts). The current trend is toward measurement of understanding in a cultural area rather than proficiency in a given subject.

Achievement test batteries. Achievement test batteries are collections of a number of tests in various subject-matter fields in a single test booklet. They usually sample English (vocabulary, reading skill, spelling, grammar, and literature), mathematics, social studies, and physical science. Chart 23 lists six well-known achievement test batteries at the high-school level. Also listed are the Co-operative and United States Armed Forces Institute subject-matter tests which, though published as single tests, can be combined to cover the desired subject-matter fields.

General educational development. Since an important purpose of education is teaching the student to apply facts he has learned, a recent trend in achievement testing has been the measurement of general educational development. These batteries stress understanding, rather than memorization of factual material. Tests of general educational development cover such areas as correctness and effectiveness of expression, interpretation of material in the physical science, social studies, and literary areas and skill in quantitative thinking. As shown in Chart 23, the *Co-operative General Culture Tests* (7), *Iowa Tests of Educational Development* (14) and the *USAFI General Educational Development* (7) series are available to measure these broader aspects of subject-matter teaching. The *Evaluation Instruments of the Eight-Year Study* (7) by the Progressive Education Association are currently being released.

Reading tests. Since the American mode of life is so influenced by the written word, the subject-matter field of reading has been given special attention in test development. Reading achievement is usually sampled in the subject-matter and general educational development batteries; but, in addition to this coverage, numerous single reading tests have appeared. Chart 23 lists seven of the more widely used measures of reading skill at the high-school level. A reading test generally provides scores on rate of reading, comprehension (words, sentences, paragraphs, stories), and special skills (reading maps, directories, tables, advertisements). As previously discussed, reading skill is closely related to the Verbal and Perceptual intelligences.

CHART 23. MEASURES OF ACHIEVEMENT**SUBJECT-MATTER BATTERIES**

Co-operative subject-matter tests (7)	Separate tests in subject-matter fields of English, foreign languages, mathematics, sciences, social studies, and other subjects.
Columbia Research Bureau tests (19)	Separate tests in subject-matter fields.
Iowa High-School Content Examination (8)	English grammar and literature, mathematics, science, social studies.
Metropolitan Achievement Tests—Advanced (19)	Reading, vocabulary, arithmetic, English, literature, history, civics, geography, spelling.
Progressive Achievement Tests—Advanced (5)	Reading vocabulary, reading comprehension, arithmetic reasoning, arithmetic fundamentals, language.
Sones-Harry High-School Achievement (19)	Language and literature, mathematics, natural science, social studies.
Stanford Achievement—Advanced (19)	Paragraph meaning, word meaning, language usage, arithmetic reasoning, arithmetic computation, literature, history and geography, elementary science, spelling.
Unit Scales of Attainment (8)	Reading, arithmetic, spelling, English, literature, history, geography, elementary science.
USAFI subject tests (7, 14)	Separate tests of English, foreign languages, mathematics, sciences, social studies, typing, and other subjects.

GENERAL EDUCATIONAL DEVELOPMENT BATTERIES

Co-operative General Culture Test (7)	Current social problems, history and social studies, literature, science, fine arts, mathematics.
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(Continued to next page)

Evaluation Instruments of the Eight-Year Study of the Progressive Education Assn. (7)	Measure intellectual skills, social attitudes, reading interests, and aesthetic appreciation.
Iowa Tests of Educational Development Tests (7)	Understanding basic social concepts, background in natural sciences, correctness in writing, quantitative thinking, interpretation of reading materials in social studies, interpretation of literary materials, general vocabulary, use of sources of information.
USAFI General Educational Development Tests (7)	Correctness and effectiveness of expression, interpretation of reading materials in social studies, natural sciences, literary materials, general mathematics ability.
READING TESTS *	
Dvorak-Van Wagenen Diagnostic Examination of Silent Reading Abilities (8)	Reading rate, vocabulary, general information, central thought, retention of details, integration of dispersed ideas, drawing inferences, interpreting contents.
Iowa Silent Reading Test (19)	Reading rate, comprehension, word meaning, location of information.
Michigan Speed of Reading (12)	Sentence comprehension.
Monroe Silent Reading III (12)	Paragraph comprehension.
Nelson-Denny Reading Test (9)	Vocabulary and paragraph comprehension.
SRA Reading Record (14)	Rate of reading, general and technical vocabulary, sentence meaning, paragraph and story comprehension, reading directory, map-table-graph, advertisement, using index.
Traxler Silent Reading Test (13)	Rate of reading, word meaning, comprehension, reading power.
* Reading test is usually contained in subject matter and GED batteries.	

With few exceptions, the student who is high in these two abilities is also high in reading skill. In addition, the reading skills are themselves highly correlated; and the proficient reader generally has skill in all aspects of reading.

Because of these relationships, a reading test is not recommended for inclusion in either the minimum or average school testing program. A reading test is most useful as a special instrument to provide additional information about students who are below average in Verbal ability or who make low scores on tests of general intelligence. These are the students who require remedial instruction to bring them to the average American literacy level. The reading test, along with other measures to sample the physical and mental traits related to reading skill, makes up the diagnostic study to be followed by a remedial program.

Occupational skill. A few tests are available to measure skill in occupational activities. The best known are the measures of stenographic proficiency—tests of language, typing and dictation skill. Examples are the *Psychological Corporation Stenographic Proficiency Tests* (12), *SRA Stenographic Battery* (14), and *Thurstone Examination in Typing* (19). Purdue University has developed a series of occupational tests for machinists, electricians, blueprint readers, and other job families (14). In general, measurement of occupational skill has not progressed too far, nor is there a great need for such tests in the school guidance program. To determine an applicant's skill in the hiring situation, business and industry generally employ a work sample or measure the man's technical knowledge by such methods as the United States Employment Service oral trade questions.

Teacher-made tests. Achievement is the one measurement area where teachers *may* and *should* participate in test development. Needless to say, test construction and statistical analysis is a highly specialized field, and much formal training and experience must precede the development of an instrument which might alter the lives of thousands of students. The areas of intelligence, interest, and adjustment are definitely beyond the scope of teacher-made tests; instruments in these areas must be obtained from recognized publishing companies who have the staff and facilities for proper test research and development.

In the area of achievement, teacher-made tests are possible—though even here, they are best developed for use as instructional aids, not as permanent records of student progress. Like any instrument, teacher-made tests must meet the seven standards of test development. The requirement least frequently

met by such tests is that of standardization—scores on the test cannot be evaluated in terms of a typical cross-section of the population, but usually only for those students in the teacher's class.

It is highly recommended that teachers attempt the development of objective-type tests for use as quizzes, mid-term examinations, and as general guideposts for their teaching. Such test development will increase their understanding of the regular testing program, aid their evaluation of student progress by quantitative and objective instruments, and provide a frame of reference for revision of course objectives, subject matter, and methods. For the important decisions of education and guidance, however, commercial tests which have proven their adherence to the test standards should be employed. *The Construction and Use of Achievement Tests* by Hawkes, Lindquist, and Mann is an excellent aid for constructing teacher-made tests and the Garrett, Lindquist, or Thurstone statistics books will help in the treatment and interpretation of the scores. These books are listed in the References.

Achievement program. Measures of student achievement follow the tests of intelligence and interest in order of importance, but precede measures of emotional adjustment. It is optional whether a series of separate tests, a battery of specific subject-matter tests, or a battery of general educational development tests be used in the program.

To take care of the area of achievement in the over-all profile, six skills are included: reading, expression, social studies, natural sciences, literary materials, and quantitative.

OTHER MEASURES

The discussion up to now has covered the student's personality as reflected in his intelligences, interests, adjustments, and achievements. A profile showing the student's strengths and weaknesses in these four main areas provides most of the information needed for adequate education and guidance. Two further aspects of the student's personality should be investigated, however, to furnish a complete picture. These are his physical equipment and his biographical history.

Physical equipment. Since bodily health plays an important part in the functioning of the mind, it is necessary that the physical status of the student be normal. Standards, as determined by health associations and the armed services, offer various indications of normal ranges. The school medical examination should provide information as to the health of the various bodily systems—vision, hearing, respiratory system, height-weight ratio, and others. It is the school's responsibility to see that any correctable defects are

called to the attention of the parents and remedied. Results of the yearly physical examination and other health information (e.g. serious illness, accidents, and so on) should be recorded on a special form and filed in the student's permanent record folder. A physical condition in the early high-school years may be the cause of mental deviation in the senior year—which would go unexplained without proper developmental records.

Biographical information. Another aspect of the student's personality which may reflect itself in his present and future problems is his background or biographical history. With the exception of socio-economic status, this information is descriptive rather than quantitative.

Socio-economic status is often as important a variable in the student's guidance and education as his intellectual abilities. This is particularly true in the selection of a career, in that low socio-economic level often means inability to finance a college education, or, more important, to adjust to the cultural status of a given occupation. Three objective measures are currently available to provide a score of socio-economic background: the *American Home Scale* (14), *Sims Score Card for Socio-Economic Status* (13), and *Minnesota Home Status Index* (18). The socio-economic score is based on information concerning parental occupation, education and club membership, home ownership, size of home library, and other items indicative of class level and financial background.

Other biographical items about the student often play a part in his education and guidance. This information includes data on home background, school history and class work record, health, extra-curricular and part-time work activities, and so on. Even though most of this information is reflected in one way or another in the student's objective profile, it is worth while having certain biographical information in the student's permanent record folder. There are available a number of cumulative record forms which provide spaces for recording biographical information. Among these are the Psychological Corporation *Guidance Summary Form for Educational and Vocational Counseling* (12) and Traxler's handbook on *How to Use Cumulative Records* (14). In general, the biographical data on the cumulative record should be kept at a minimum, and reliance be placed on objective scores reflecting the student's development in the intellectual, interest, achievement, and physical areas.

IN PRACTICE

In practice, what tests is the educator to use in his evaluation program? Eight intelligences, eight interests, five adjustments, six achievements,

one over-all physical, and one socio-economic measure have been described—twenty-nine scores in all.

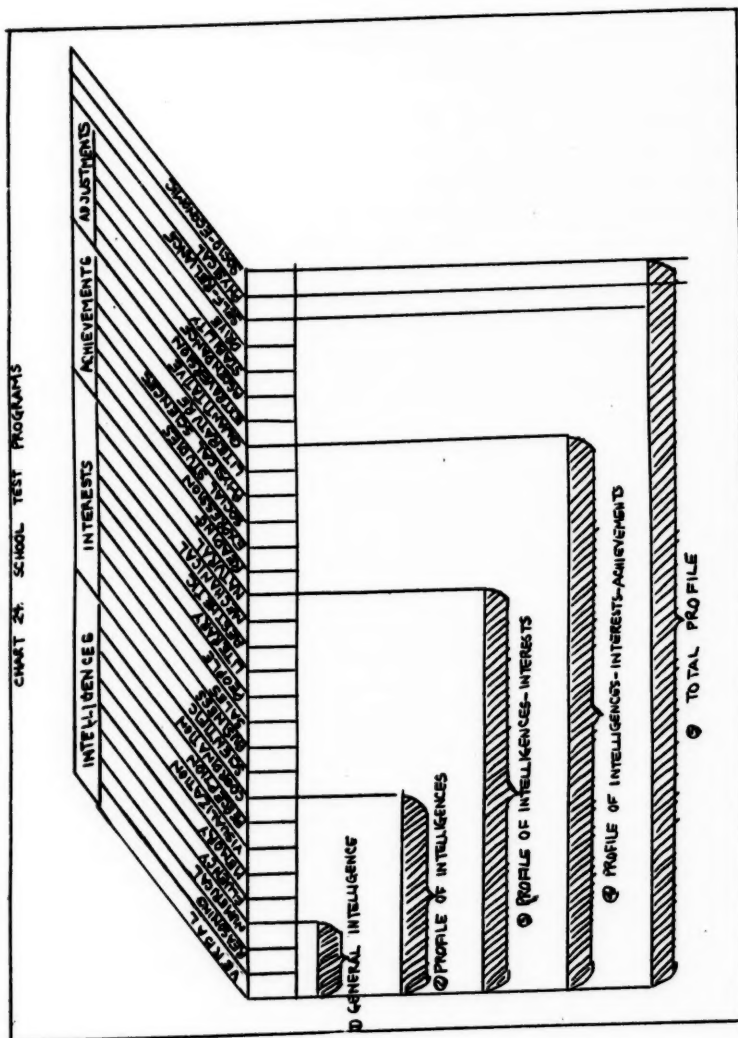
The number of tests used will depend upon many factors: the school budget for testing and guidance, staff (both technical and clerical), size of the total guidance program, experience with tests, time available for testing and follow-up, educational philosophy, and many others. The major determining factor in the size of the testing program is probably per-pupil appropriation for purchase of tests. In general, each score obtained costs approximately five cents per pupil (materials, personnel, overhead). One national average reported for test purchase is eight cents per pupil—quite in contrast to \$200.00 per pupil per year for education. In these inflationary times any attempt to be accurate about costs is questionable. It would seem that if the entire gamut of costs is figured that these available averages would be low.

Taking all of the various factors influencing the test program into consideration, certain rules-of-thumb may be set down for planning "What Tests?":

General intelligence. The minimum (and usually the initial) program is a test of general intelligence—a combined measure of Verbal, Reasoning, and Numerical abilities which are the bases of the academic curriculum and white-collar occupations. One half hour is spent in administration of the test, and one score is obtained. Per-pupil cost is five cents. To supplement this minimum test information, the student's record must include data on school marks, health, biography, and other items to replace additional test scores. A decision based on one test score without regard to other information about the student is most unwise.

Profile of intelligence. If more than one test score is to be obtained, a multi-score test of intelligence (or a series of single-score tests) is recommended. If all the intelligences cannot be tested, tests may be chosen in terms of the high-school curriculum the student is taking (academic, commercial, college-preparatory, mechanical, and so on). Since the intelligences have been shown more predictive of success in school and career activities than any other traits, guidance can be more effective when based on an intellectual ability profile. From three to four hours should be planned for test administration and proper follow-up. Per-pupil cost should be figured between fifteen and twenty cents. Again information on the student's interests, emotional adjustments, and achievements must be obtained from other sources.

CHART 24. SCHOOL TEST PROGRAMS



Profile of intelligences-interests. The next recommended addition to the program is the interest area. From five to six hours is necessary for administration and follow-up to obtain a composite profile of abilities and interests. Per-pupil cost should range from twenty to twenty-five cents.

Profile of intelligences-interests-achievements. Knowing the student's potential abilities and interests, the next information of importance is his achievements. A minimum of seven to ten hours should be planned for administration and follow-up of a composite battery of intelligence, interest, and achievement tests. Per-pupil cost should range from twenty-five to thirty cents. From the standpoint of the educator and his evaluation of teaching content and method, it may be desirable to introduce achievement tests earlier in the test program; this decision rests on the philosophy of testing as to student or school-centered.

Total profile. The testing program of the average school will probably not reach the section of the profile labeled "adjustment." In view of present knowledge in measuring emotional adjustment, only those schools advanced in their evaluation program and with personnel trained in clinical interpretation should attempt to chart the student's potential for adjustment. A minimum of four days should be planned for the administration and follow-up of the total profile. Per-pupil cost should range from thirty to thirty-five cents. (See Chart 24.)

PART III

How Test?

HOW Test?" tends to be too much an administrative problem. It involves both policy decisions and detail arrangements. In practice the majority of questions as to "How Test?" are answered in the office of the superintendent, principal, or other administrative officer; but teachers, too, need to help in the making of decisions about test policies. For planning the administration of the testing program, a series of steps may be set down—as indicated on the checklist in Chart 25 and discussed below.

CHART 25. CHECKLIST for HOW TEST

- ☐ Discuss place of testing in total educational and guidance program.
- ☐ Determine per-pupil appropriation for testing. \$.....
- ☐ Select director of test program and staff.
- ☐ Decide test areas to be covered.
- ☐ Decide specific tests to be used.
- ☐ Order tests from publishers—at least two months in advance of administration date and giving exact information on order.
- ☐ Orient school personnel affected by test program.
- ☐ Select appropriate room for testing.
- ☐ Schedule students for test administration.
- ☐ Arrange for proctors.
- ☐ Arrange for necessary materials; for example, timing devices, pencils.
- ☐ Prepare examiner manual for step-by-step administration of tests.
- ☐ Administer tests under standardized conditions.
- ☐ Score tests (clerical or machine scoring).
- ☐ Indicate scores on profile sheets.
- ☐ Plan and execute profile interpretation. (See Part IV).

Testing philosophy. The first item in planning the school testing program is a discussion by the administrative staff of the place of testing in the total education and guidance program. At times, it is desirable to appoint a committee representing administrative, teaching, and technical staffs to set down the test philosophy. In all areas, but especially in achievement testing, it is highly im-

portant that teachers help develop the philosophy and even help select the tests—over and above construction of tests. It would be well to obtain sample copies or specimen sets of several different tests in any one area and have the staff members in that area study all of the samples with a view to recommending specific selection. The resulting test policies should clarify the principles under which the entire test program will operate. They should provide answers to such questions as: the importance of the test program; size of the program; use of results in administration, supervision, curriculum, methods, and guidance; interpretation of results to teachers, students, parents, and community; and other policy-making decisions. Once the testing philosophy of a school is set down in full, it should encompass any specific decision to be made in the further administration of the program.

An initial philosophy by a school just starting its test program might be:

The test program will be small, limited to a test of general intelligence. The responsibility of administering this test, scoring, and recording the score on the pupil's record is left to each teacher. Use made of the test score will also be the responsibility of the individual teacher. No school policy will be set up as to grouping, curriculum, or methods on the basis of the test results. Students are not to be told their score nor are parents to be informed as to their child's general intelligence, except under unusually constructive circumstances.

Such a test philosophy is obviously of 1920 vintage. While some schools have such a viewpoint, it is usually for the reason that their program is just beginning; and like any new educational tool, testing must be introduced gradually.

A more inclusive testing philosophy might be:

The test program will cover the areas of intelligence, interest, adjustment, achievement, physical status, and background thoroughly. A competent test director and staff will be appointed, and the administration of the program will be centralized in this office. In addition to regular administrative details, a research program will be carried out which will be co-ordinated with national programs of test development. Special classes in the freshman and senior semesters will be organized for administration, interpretation, and guidance on the basis of test results. Student test profiles will be used in over-all administrative decisions and will play an important part in planning the supervision, curriculum, methods, admission, placement, grouping, remedial classes, and other aspects of student education and guidance. Student strengths and weaknesses as shown by his

test profile will be discussed with him and his parents, and the tests will influence his self-appraisal and course-career decisions.

This testing philosophy is, of course, very well developed and one in which tests play a basic part in the program of education and guidance. It is the type of philosophy which is reached only after the school test program has been underway for a number of years—but in whole or part, it should represent the goal of all schools using tests.

Per-pupil appropriation for testing. Since school budget, more often than any other consideration, becomes the deciding factor in the development of a program, the item of per-pupil appropriation for testing is placed near the top of the checklist. The two main expenses to be considered in computing per-pupil appropriation include cost of test materials and salaries of participating personnel (technical and clerical). As previously stated, each test score obtained for each student should be estimated at a minimum of five cents (more, no doubt, in the future) to include test materials, personnel, and other hidden expenses.

Test program director. For efficient administration of any size test program, it is recommended that a test director be appointed. It is desirable that the test director have a master's degree in psychology or education with specialization in testing and statistics and that he have some practical experience in handling the details of testing and guidance programs. Depending upon the size of the program, the test director may serve in this capacity full time or part time. When acting as test director, he should be an administrative officer and adjust to the administrative policy. Once the test philosophy of the school is set down, the test director should thereafter have full responsibility for administering the program. Thus the remaining items on the checklist become the province of the test director.

"What Tests?" By the time the item, "What Tests?", is reached on the checklist, the policy decisions as to the test philosophy and per-pupil appropriation will have been made. Thus the question of "What Tests?" will be answered in broad terms. However, it is the responsibility of the test director and those who assist him to interpret the school philosophy in a concrete manner. Those who are most responsible must decide the test areas which will best carry out these policy decisions. The discussion in Part II should afford some help in reducing the school philosophy to a specific and practical test program. Advice and assistance may also be obtained from state test departments, members of the psychology and education departments of colleges and universities, and other noncommercial groups. If outside assistance is obtained, care should be taken that the program remains a school function. In the selection of specific

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tests, it is often advisable to use the best obtainable expert information and the help of a committee of teachers. The only legitimate reason for outside assistance is growth of the staff to the place at which they will no longer need such assistance. Even though achievement of this goal may be remote in many instances, the goal itself should be foremost in deciding what kind of outside help to get.

After the specific tests are chosen, orders should be placed with the test publishers as far in advance as possible. Two months before the date of testing should be considered a minimum. The test order should be made out with care and with reference to a recent catalog of the publisher. (Publishers will furnish catalogs upon request.) School stationery should be used in preparing the order. Items such as test title, form, grade level, quantity, accessory materials, exact address for shipment and specific consignee, and other details that may cause delay or error in shipment should be checked with care. If possible, the test order should be routed through the school purchasing department so that the entire billing, budgeting, and payment may be handled properly. *Personnel orientation.* A very important phase of the test program is adequate orientation of all personnel who will be affected in the administration and use of the tests results. This orientation is probably best accomplished by a short conference with small groups of teachers and other personnel. One method successfully used in these orientation meetings is a series of slides presenting the highlights of "Why Test?" "What Tests?" "How Test?" and "How Interpret Results?" Certain of the chart material in this monograph adapts itself well to slide presentation and may be used for this purpose if desired. The orientation should briefly present both the general theory of testing and the specific program of this school. A typical orientation program might take forty-five minutes in which approximately fifteen slides with commentary could be presented, followed by questions from the audience. It is usually true that the time and effort spent in preparing and presenting such an orientation is well worth while as judged by the later co-operation and participation of school personnel in the program.

Appropriate testing room. An appropriate room in the school should be selected for testing. This room should preserve standard testing conditions as much as possible. For example: The students should have comfortable and adequate working space—desks being better than arm-chairs, and auditoriums usually not being appropriate if the student must work on his lap. Lighting should be adequate. All extraneous sights, sounds, and other distracting stimuli should be kept to a minimum. If these conditions are met, the testing room may be of any size. Two hundred students can be as easily tested as twenty

if facilities are adequate. The size of the room should be determined by the schedule of students, test material on hand (when re-usable test booklets are employed), and the number of available proctors. Students should be seated far enough apart that they are not tempted to lower their own scores by peering at their neighbor's paper.

Student scheduling. In order that the testing may be carried out most efficiently, it is necessary that the students be scheduled with care. While preparation of a student testing schedule seems rather simple, actually the number of variables entering into the schedule can often become quite confusing. The size of the testing room will determine the number of students to be tested at one time. Only students taking the same battery of tests should be scheduled for a given period. If the testing is to be carried out on school days, the program will have to coincide with the educational schedule of both the school and the student. Students must be notified through a reliable channel so that the number of make-up sessions can be kept at a minimum, and so on, for numerous other considerations entering into scheduling the test administration. Since the administrative problems of scheduling are not novel to any school, the test director can probably obtain the help of a clerk competent in these intricacies.

Test administration equipment. Two types of equipment are needed in administering tests—personnel (e.g. proctors) and testing materials (e.g. timing devices, pencils). Both of these should be arranged for in advance of the testing. Students should be supplied pencils with erasers. Tests must be timed with great accuracy either by stop watches or standard interval timers. The interval timer is advantageous in that it rings at the end of a desired time period. Materials (including the test) should be arranged for most efficient distribution at the time of test administration.

Examiner manual. To be sure all the phases of giving the tests are understood, an examiner manual should be prepared. This manual should state in detail such information as the orientation statement to the students, sequence of the tests, distribution of test materials, recording name and other information on test's reading practice page and answering questions about the test, exact time limits for each test—in other words, a word-for-word script for giving the test. The reason for such a specific statement of each word and action in test administration is that one false move by the examiner may invalidate a complete set of scores. Once prepared and agreed upon, this examiner manual must be considered the "bible" for administering this battery of tests to students of this grade level.

Probably the most difficult phase in preparing the examiner manual is the treatment of the practice or instruction page for each test. The guiding rule

should be that each student must understand what is required of him in the test. If he is confused and does not comprehend what he is to do, the test becomes a measure of Verbal intelligence, rather than of the trait which the test is actually supposed to measure. The ideal practice page for a test is one in which the student is told the purpose of the test, two or three problems are worked out for him, and he then works more practice problems to which answers are given—doing all these things himself. This method works well for students who are average or above in Verbal intelligence. For students with reading difficulties, practice material should be read aloud by the examiner. However, what is to be said by the examiner (and the proctors) must be set down explicitly in the examiner manuals. Too often a casual statement or explanation by the examiner can place a given group of students in a much better position to attack the test problems than the next group of students who do not benefit by this bit of information. In general, authors of standardized tests furnish the exact method and wording for administration. This should be followed in preparing the examiner manual with few exceptions. The test administrator prepares for testing by studying the examiner manual thoroughly and by actually practicing the administration. He should take the battery of tests himself and administer the battery to a small group of students. Test administration is very similar to producing a play—proper study and practice by the actors are essential.

Administration of the tests. With the stage set by having the scheduled student in an adequate room and supplied with proper equipment and the examiner thoroughly rehearsed in his role, the actual administration of the tests may begin. The guiding rule is that of maintaining standardized conditions throughout the test administration. And the points especially to be watched are instructions for taking each test and exact timing of the tests. The examiner must be in complete control of the situation at all times. Since test taking is a de-energizing task, it is recommended that a test period last no more than two hours and that short rest intervals be given every half-hour. Intelligence and achievement tests require more energy expenditures than do interest and emotional inventories. Naturally time allotments are dependent on such factors as school schedules, the tests to be taken, the age of the students, the conditions of testing, and the time of day.

Scoring the tests. Scoring tests is an extremely monotonous task. Best test scorers have average Reasoning ability and high Perceptual intelligence.

School clerks more often meet these requirements than do teachers. It is recommended that scorers be given a Perceptual test and only those individuals be used who meet the 75th percentile score of the general population.

Tests are designed for various types of scoring. The two main methods are hand-scoring and machine-scoring. Hand-scoring is carried out by means of an answer key. This key may be merely a statement as to what the test answers are (a highly inefficient method); it may be a strip or an overlay stencil which allows the matching of right answers with the student's answers; or it may be a key self-contained in the test so that the answers are automatically recorded (by carbon or pin punches) as correct when the student marks his paper. Machine-scoring as carried out by the International Business Machine (IBM) is most efficient when testing is carried out on a large scale (500 or more papers) and is available either by rental of an IBM test scoring machine or through scoring services of state, university or publisher agencies.

Tests may be scored by clerks as part of the administrative detail of the test program, or they may be scored by the students themselves when testing is merely an instructional part of a guidance or career class. It is important that the scoring, by teacher or competent clerk, be accurate, and each paper should be checked twice for both comparison with answer key and computation of the score. The test scores are the basic data to be used for all future steps, and an error in scoring may result in significant misinterpretations.

Profiling scores. The final step in "How Test?" is the preparation of a meaningful statement of the student's scores. The summary sheet most useful for collecting each student's scores is the *profile*. How the school can prepare its own profile sheets for particular test batteries will be shown in Part IV.

The usual profile sheet contains a series of columns, one for each test in the battery. In each column are listed all of the possible raw scores which can be made on that particular test. When the test scores have been checked for complete accuracy, all of the tests for a given student are collected and a profile sheet is prepared for him. In each test column, the raw score made by the student is encircled (and, of course, this step is checked). As many profiles as are needed may be prepared—either one at a time or in multiples by using a pad of profiles and carbon paper. In preparing extra profile sheets, it is recommended that a copy be made for the test publisher so that he may incorporate these scores into his national norms. After the scores are thus recorded, the test papers of the student may be destroyed unless the research staff is carrying out a project involving study of the test items. One of the profiles is filed in the student's permanent record folder.

These, then, are the administrative details of the test program. They are the steps that most technical personnel dislike to perform. But they are the only means to the student profile. And it should be remembered that the scores are only as reliable as *how* the tests were administered.

PART IV

How Interpret and Use Test Results?

THE most important phase of the test program is the interpretation and use of the test scores. Interpreting the results provides answers to the questions raised in Part I, "Why Test?" It applies the information obtained from "What Tests?" to practical problems of education and guidance. And it provides a reason for administrative details of "How Test?" The method by which the test scores are interpreted and used is, therefore, the crux of the program. It is the phase which gives meaning to the entire program and which translates the test results into practical application.

THE STUDENT PROFILE

Each student's test scores are charted on his profile—as shown in the specimen profile in Chart 26. There are a number of points worthy of note on the student profile. Profile sheets are not necessary forms, but they are one means of making test results graphic.

Identifying information. At the top of the profile sheet (in a location convenient for filing) is given the student's name, his group, age, the date of testing, and other information needed to identify the profile and the information it contains.

Traits measured. The diagonal lines in the upper part of the profile provide spaces for listing the test areas, traits measured, and specific tests used for this student. The specimen profile in Chart 26 indicates that John Jones was given tests in the intelligence, interest, achievement, emotional, physical, and socioeconomic areas.

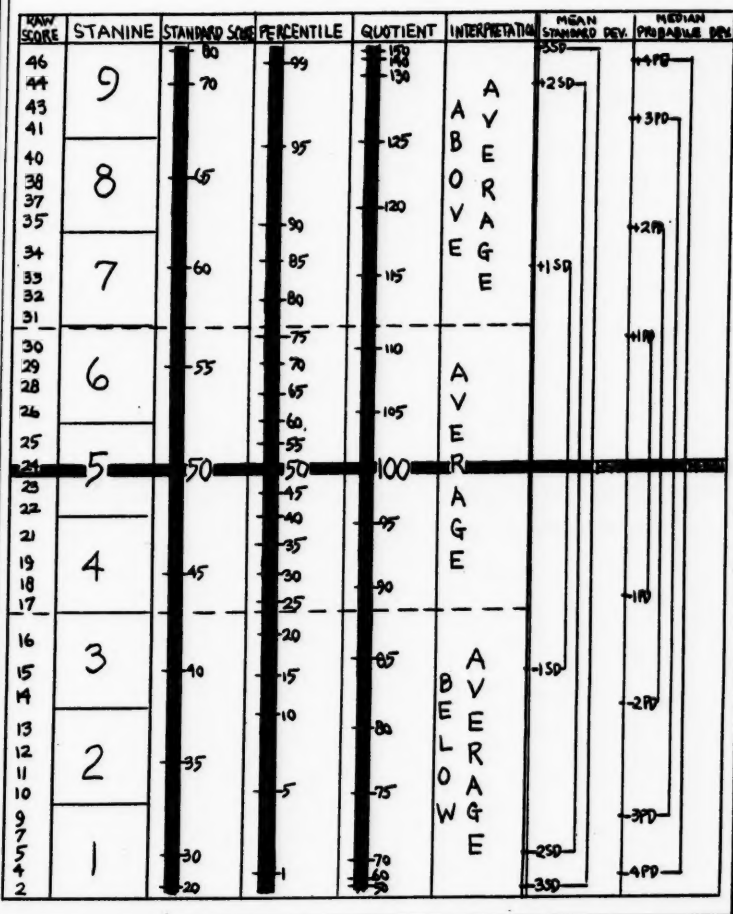
Raw scores on tests. In the column under each trait are listed the Raw Scores which can be made on that test by a particular group of students (in the specimen profile, 15-year-olds). The placement of the raw scores values within the column is determined by the norms for the test as will be discussed below. The range of scores made by John Jones for each test taken are represented by the shaded sections on the Chart. John's profile is indicated by the shaded portions running across the page.

Chart 26. A Specimen PROFILE

NAME Jones LAST John FIRST James MIDDLE Freeman AGE 15 DATE 9-15-48

INTELLIGENCES			INTERESTS			ACCOMPLISHMENTS			ADJUSTMENTS			RANKS		
VERBAL	QUANTITATIVE	SPATIAL	ARTISTIC	SCIENTIFIC	SPORTS	READING	WRITING	TECHNICAL	PHYSICAL	ACADEMIC	STAMINE	STAMINE	STAMINE	
51	47	43	44	41	38	44	42	40	43	41	40	40	40	
48	44	40	41	38	35	41	39	36	40	38	37	37	37	
45	41	37	38	35	32	38	36	33	37	35	34	34	34	
42	38	34	35	32	29	35	33	30	34	32	31	31	31	
39	35	31	32	29	26	32	30	27	31	29	28	28	28	
36	32	28	29	26	23	29	27	24	28	26	25	25	25	
33	29	25	26	23	20	26	24	21	25	23	22	22	22	
30	26	22	23	20	17	23	21	18	22	20	19	19	19	
27	23	19	20	17	14	20	18	15	19	17	16	16	16	
24	20	16	17	14	11	17	15	12	16	14	13	13	13	
21	17	13	14	11	8	14	12	9	13	11	10	10	10	
18	14	10	11	8	5	11	9	6	10	8	7	7	7	
15	11	7	8	5	2	8	6	3	7	5	4	4	4	
12	8	4	5	2	-1	5	3	0	4	2	1	1	1	
9	5	1	2	-1	-4	2	0	-3	1	-1	-2	-2	-2	
6	2	-2	-1	-4	-7	-1	-3	-6	-2	-4	-5	-5	-5	
3	-1	-5	-4	-7	-10	-4	-6	-9	-5	-7	-8	-8	-8	
0	-4	-8	-7	-10	-13	-7	-9	-12	-8	-10	-11	-11	-11	
-3	-7	-11	-10	-13	-16	-10	-12	-15	-11	-13	-14	-14	-14	
-6	-10	-14	-13	-16	-19	-13	-15	-18	-14	-16	-17	-17	-17	
-9	-13	-17	-16	-19	-22	-16	-18	-21	-17	-19	-20	-20	-20	
-12	-16	-20	-19	-22	-25	-19	-21	-24	-20	-22	-23	-23	-23	
-15	-19	-23	-22	-25	-28	-22	-24	-27	-23	-25	-26	-26	-26	
-18	-22	-26	-25	-28	-31	-25	-27	-30	-26	-28	-29	-29	-29	
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-72	-76	-80	-79	-82	-85	-79	-81	-84	-80	-82	-83	-83	-83	
-75	-79	-83	-82	-85	-88	-82	-84	-87	-83	-85	-86	-86	-86	
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-231	-235	-239	-238	-241	-244	-238	-240	-243	-239	-241	-242	-242	-242	
-234	-238	-242	-241	-244	-247	-241	-243	-246	-242	-244				

CHART 27. RANKS of TEST SCORES



Ranks on tests. At the right of the profile on Chart 26 are the Ranks, or converted scores. A rank is merely a convenient scale to which the raw score on each test is converted, since raw scores have little meaning in themselves. The rank indicates where a student stands among other students in his group and also his standing on the various traits to be compared at a glance.

There are many different types of ranks. Percentile ranks, standard scores, and quotients are the three most widely used. The relation between these three ranks is shown in Chart 27 and discussed below.

The *percentile rank* indicates this student's standing in a sample of 100 of his group. Thus if he has a percentile rank of 30, he exceeds 30 out of every 100 individuals in that trait, but is surpassed by 70 out of 100 students. The percentile scale is often criticized for the fact that it bunches the students in the center and spreads them out at the extremes. For example, two students with scores of 80 and 90 are actually much farther separated than two students with scores of 40 and 50; but the percentile scale does not reflect this difference.

To avoid this criticism of the percentile scale, psychologists devised the *standard score*. This rank also takes into consideration the bell-shaped or normal curve into which scores on most mental traits fall and proportions the scores at the standard deviation points along the scale. A new version of the standard score is in the *stanine* which was used by the Army Air Forces in World War II. One of its advantages is that it uses a short scale from 1 to 9.

The third type of rank is the *quotient*. Most often used with tests of intelligence, the quotient scale has an average rank of 100, indicating that the mental age and chronological age of the student are the same. When mental age is higher than chronological age, quotient scores, or ranks, are above 100; when mental age is lower, quotients are below 100. After the age of 15, quotient ranks are no longer applicable.

As indicated in Charts 26 and 27, test scores may be broadly interpreted as *above-average*, *average*, and *below-average*. Some text experts prefer *high*, *above-average*, *average*, *below-average*, *low*. Divisions would be stanine 5 average, stanine 6 above-average, stanine 4 below-average, stanines 7, 8, 9 high, stanines 3, 2, 1 low. *Above-average* test performance means that the student is at or above percentile 75, standard score 57, stanine 7, or quotient 111.

Below-average performance means that he is at or below percentile 25, standard score 43, stanine 3, or quotient 89.

Average performance is indicated by a score between the above-average and below-average points. Scores which are exactly average are percentile 50, standard score 50, stanine 5, and quotient 100.

Use of student ranks. By means of the profile, the educator can see at a glance the student's standing or rank on each of the traits measured; and more im-

portant, the student's over-all pattern of strengths and weaknesses. Composite profiles may be drawn for groups of students (based on an average of their scores on each trait) to indicate the standing of a given room, section, class, school, or district in the traits measured.

For interpretation of either individual or group profiles, the norm or population group from which the raw score-rank conversions were made is important. The norm group may be national, regional, state, county, or local; but the norm group must be specified since the student may show a different profile depending upon the population to which he is compared. For most adequate interpretation, national or regional norms are recommended since the student will be competing at a later date with a national or regional population; and it is toward this problem that guidance should be directed. If regional or local norms are used, it is obvious they must first be figured. Norms furnished by test authors are usually national in scope.

Other information about the student should be integrated with his current test scores. These data may include former test profiles, current and past school grades, physical health, biographical information, special reports from teachers, and other information in the student's permanent record folder. If such supplementary information does not bear out the standing of the student on certain mental traits, interpretation of the current profile must take these disagreements into consideration. If these data do corroborate the student's test ranks, guidance and counseling can be carried out with greater assurance. Should the school test program not cover the six general areas on the profile, information about the student's behavior in the missing areas must be obtained from other sources. Without an inventory of the student's total personality (both present status and developmental history), interpretation may be biased. These considerations once more indicate the need for caution in counseling the student on the basis of test scores alone, or in certain instances out-dated test scores, and the necessity for assigning profile interpretation to personnel with adequate training and experience.

INTERPRETING THE PROFILE

Interpretation and use of test results often stop at a discussion of the student's standing on the various traits measured. At this point, little of practical significance has been said; and the administrator, teacher, student, or parent has little information to aid in specific planning of future activities. Thus it is necessary to bridge the gap between the student's status as reflected by his profile and what this status means for solving subsequent problems which he will face in society, education, and occupation.

Premises of prediction. The guiding principle for discussing the student's profile is expressed by three premises:

- Every problem which the student meets in life requires a certain pattern of intelligence, interests, achievements, adjustments, physical health, and personal history.
- Each student has his own individual pattern of these traits. This pattern is charted on his profile.
- The student is best educated and guided by making him aware of his strengths and weaknesses, aiding him to remedy deficiencies in skills required for living in society, informing him of the traits required for success in his planned activities, and letting him prepare himself for those situations in which he has the greatest potential for success and personal satisfaction.

While research has not progressed to the point where we know with certainty the exact pattern of traits required for success in various life activities, some of the landmarks are known. Chart 28 presents an interpretation of the twenty-nine traits discussed in WHAT TESTS. Because of the importance of this information in interpreting the student profile, it is recommended that it be placed on the back of the school profile sheet. This may be accomplished either by reproducing Chart 28 intact, or modifying it to fit a particular school program. The advantage of including such information on the reverse of the student profile is that it relieves the educator of making a general interpretation of the tests, and allows him to spend this time on specific problems of the students.

Charts 29 to 34 present a series of specimen profiles with their specific interpretation. These specimens should be considered merely as examples and should not be used as standards against which to compare profiles of individual students.

CHART 2B THE STUDENT SELF-APPRAISAL PROFILE

Your PROFILE of the Mental Abilities

(Other Intellectual Factors, Interests, Achievements, and Traits may be Listed)

Your Emotional Adjustment Self

COMPANION.

[illegible]

CHART 28. THE STUDENT SELF-APPRAISAL PROFILE (Copy)

Your PROFILE of the Mental Abilities

Tests are merely short cuts to help you "know yourself." Your test profile on the other side of this sheet shows your *strengths* and *weaknesses* in the mental abilities.

You can look at your mental self from six angles: (1) your **INTELLECTUAL** self, or your ability to think in various ways with various kinds of materials; (2) your **INTEREST** self, or your like (or dislike) for different kinds of activities; (3) your **ACHIEVEMENT** self, or your skill in the school subjects; (4) your **EMOTIONAL ADJUSTMENT** self, or the ways you face and solve the problems of living; (5) your **PHYSICAL** self, or your bodily health; and (6) your **SOCIO-ECONOMIC** self, or your class level in the community.

Each of these aspects of your personality is charted on your profile. Here is what the ups and downs on your profile mean:

If your score on a test is *above the top dotted line*, you are **ABOVE-AVERAGE** in that ability.

If your score is *between the two dotted lines*, you are **AVERAGE** in the trait.

If your score is *below the bottom dotted line*, you are **BELOW-AVERAGE** in that ability.

The six aspects of your personality which are charted on the profile are important for planning your future. Your scores are good indicators of your mental strengths and weaknesses. They show where you must improve to become an intelligent acting citizen. They give one basis for choosing the school courses you are going to take. They indicate the career area for which you are best fitted, although they may not show all of your possibilities. A career may depend upon a variety of attributes in combinations.

Here is what the twenty-nine scores you have made mean:

YOUR INTELLECTUAL SELF

VERBAL is your ability to understand words, ideas, and other kinds of information. Comprehension of language is important for almost all school courses, since teaching is carried out by words. Understanding of language is also important for your being an intelligent citizen, since our society relies so heavily on communicating ideas by the written and spoken word. Careers requiring above-average language comprehension include office clerk, scientist, secretary, executive, librarian, teacher, author, and other jobs where the personnel must deal with words. Practically all jobs demand that the worker be able to understand instructions.

REASONING is your ability to deal with relationships, to solve difficult problems, to think logically, and to foresee and plan. Outstanding students and professional adults usually are such because they are above-average in Reasoning intelligence. An above-average score in Reasoning is generally a prerequisite for college success; and for entrance into such professions as doctor, executive, inventor, lawyer, scientist, statesman, supervisor, and teacher.

NUMERICAL is your ability to work with systems. Numerical intelligence takes in more than just the number system, since it applies to file, code, and other standard

systems. Quantitative thinking is becoming very essential in our society in that science uses numbers as an important tool. Above-average Numerical intelligence is needed for success in careers such as accountant, bank teller, bookkeeper, cashier, file clerk, sales clerk, and statistician.

FLUENCY is your ability to use words with ease. People high in Fluency intelligence are able to write and talk without blocking or searching for the right word. This ability is important in such school courses as debate, journalism, and speech; and in careers of commentator, reporter, writer, secretary, salesman, and correspondence clerk.

MEMORY is your ability to recognize and recall various kinds of material—words, numbers, names, faces, objects, and so on. A number of school courses require good Memory ability; for example, foreign languages, science and mathematics subjects, and shorthand. Memory is also important in careers such as store clerk, writer, public relations man, and administrator.

VISUALIZATION is your ability to think about objects in two and three dimensions or to perceive the sizes, shapes, and relations of objects in space. Art, engineering, geography, interior decoration, shop courses, geometry, and mechanical drawing all require you to visualize spatial relations. Success in careers such as carpenter, chauffeur, designer, electrician, engineer, machine operator, and pilot demand above-average Visualization intelligence.

PERCEPTION is your ability to see details quickly or to scan, locate, and recognize likenesses and differences rapidly. Office practice courses, laboratories, shop courses, and typing require this intelligence. Clerical employees must be above-average in Perception, as should also mechanical and factory workers. The craftsman, file clerk, inspector, mechanic, machine operator, mail carrier, proofreader, and telephone operator are but a few of the jobs where Perceptual intelligence is important.

CO-ORDINATION is your ability for fine and gross muscle control, dexterity, and co-ordination of the eye and hand. This intelligence is needed in school courses and occupations where muscles must be controlled and precise movements are required.

YOUR INTEREST SELF

While your intelligences refer to your ability to do certain things, your interests indicate your likes (or dislikes) for various kinds of activities. You are able to solve a problem more successfully when you have both the intelligences required to figure it out and the interests to work at the solution. There are eight basic interests:

SCIENTIFIC. Your Scientific interest is your liking for chemistry, biology, mathematics, psychology, and the other physical, biological, mathematical, and social sciences. The intelligences supplementing Scientific interest for complete success in this area are Reasoning, Verbal, and Numerical.

BUSINESS. Your Business interest covers commercial affairs—business administration, office procedures, and clerical work. The accountant, clerk, executive, personnel man, salesman, secretary, supervisor, and typist require this interest for motivation to do office work.

SALES. Your Sales interest indicates that you like to meet people and to convince and sell them on your ideas. Sales interest is not confined just to sales careers, but is required for such occupations as advertising man, diplomat, executive, foreman, lawyer, manager, and public relations man.

PEOPLE. Interest in helping people is very important for the social worker, teacher, nurse, personnel worker, doctor, and counselor. We should all have enough People or social service interest to respect the rights, duties, and property of others.

LITERARY. Your Literary interest indicates preference for reading, writing, story telling, and reporting. Every intelligent citizen must have at least average Literary interest so that he may be aware of our cultural history and current events as reported in books, magazines, and other sources of information. The author, reporter, actor, and teacher are usually above-average in this interest.

AESTHETIC. Aesthetic indicates interest in art, music, and the other fine arts. Like Literary, Aesthetic interest is important for good living. The man with these interests spends many hours each day reading, observing, and enjoying the beauties of living. The architect, artist, composer, dancer, designer, musician, and photographer are careers which require above-average Aesthetic interest for their successful performance.

MECHANICAL. Your Mechanical interest indicates a liking to work with tools, operate machines, repair equipment, and design and build objects. Blueprinting, electricity, laboratory courses, machine shop, manual training, mechanical drawing, physics, and shop arithmetic are courses in which Mechanical interest plays a part in your grade. The carpenter, chauffeur, engineer, factory worker, machine operator, plumber, repairman, and toolmaker are but a few of the many jobs in which above-average Mechanical interest is important. Many people whose career is not in the mechanical area but who have a Mechanical interest find enjoyment in hobbies and other leisure activities in this field. The intelligences related to Mechanical interest are Visualization, Perception, and Co-ordination.

NATURAL. Natural interest refers to working with nature. Agricultural courses require this interest. Such occupations as animal breeder, botanist, farmer, fisherman, florist, lumberman, tree surgeon, and veterinarian should be entered only if Natural interest is above-average. Natural interest, along with interests in People, Literary, and Aesthetic activities, are worth while cultivating for enjoyment and good living.

YOUR ACHIEVEMENT SELF

Your intelligences and interests tell about your potential abilities. What you have actually accomplished in school is charted under your Achievements. Six school achievements are important.

READING. Your Reading achievement is related to your Verbal and Perceptual intelligences and to your Literary interest. Of all the achievements, Reading is the most important for keeping up with world events, learning school subjects, and preparing yourself for careers in the office or business fields. If your score is below-average, you should definitely try to improve your Reading skill—at least so you are able to keep up with current events.

EXPRESSION. Your Expression refers to your skill in the correct and effective use of English. Certain jobs, such as writer, commentator, salesman, correspondence clerk, and secretary require above-average skill in Expression.

SOCIAL STUDIES. Your achievement in Social Studies refers to your grasp of the facts of history, geography, economics, current events, civics, and the social sciences; and even more important, your ability to understand, interpret, and apply these facts

to practical problems. Like Reading skill, your Social Studies achievement should be at least average.

PHYSICAL SCIENCES. Your Physical Science achievement indicates your understanding of the principles of chemistry, physics, biology, and other natural sciences. For the student thinking of a career in the scientific-technical family, it is important that he be average or above-average in Physical Science achievement and also in Scientific interest.

LITERATURE. Your Literature achievement is your skill and appreciation in reading and interpreting literary materials—our heritage of the best of the written works of all time.

QUANTITATIVE. Quantitative achievement refers to your knowledge of the basic mathematical processes and your ability to apply these techniques to the solution of practical problems.

YOUR EMOTIONAL ADJUSTMENT SELF

While your intelligences and achievements indicate your learning power and actual skill and your interests reflect your preferences for certain activities, a fourth aspect of your personality is also important. This is your adjustment to the various types of problems you meet in school, in your leisure time, at home, and in living generally. Five phases of your emotional adjustment are important. These, and others of similar or less importance, are the factors which make up personality.

EXTROVERSION. Your Extroversion indicates your tendency to be with people and to work with others. Salesmen, as an example, must be above-average in Extroversion to be successful in their type of work. Scientific-technical men are usually slightly below the average in Extroversion. For living in our society where co-operation with others is most important, at least average Extroversion should be the goal of all students.

ASCENDANCE. Ascendance refers to your tendency to take the lead in a group, to dominate a situation, and to be in the limelight. People in administrative and supervisory jobs are usually above-average in Ascendance.

STABILITY. Your Stability indicates the ease with which you adjust to problems, are calm, and exercise self-control. This is another of the adjustments in which your score should be at least in the average range.

DRIVE. Drive is your tendency to work hard on a problem, to exercise initiative in carrying out tasks, and to stick to a job until it is finished. More often than not, success in school and in career is due largely to Drive.

SELF-RELIANCE. Your Self-Reliance is your tendency to arrive at your own decision with assurance and self-confidence. Professional careers generally require that you be above-average in Self-reliance.

YOUR PHYSICAL SELF

Since your bodily health plays an important part in the way your mind functions, the fifth aspect of your personality to be investigated is your Physical self. The school medical examination indicates your bodily health in such aspects as vision, hearing, teeth, height-weight ratio, and other phases. The results of the medical examination are summarized in one over-all score. If you are below-average physically, the reasons

are noted in the comments on your profile, and you should take steps to correct these defects.

YOUR SOCIO-ECONOMIC SELF

The sixth aspect of your profile is your Socio-economic or class status in the community. Socio-economic status is important in that a below-average score often means inability to finance a college education; or, more important, to adjust to the cultural level of a given occupation.

YOUR TOTAL PROFILE

Now that we have discussed each mental trait on the profile, let us look at your total profile—your over-all pattern of strengths and weaknesses. Here are some of the patterns which you should have for solving various life problems.

The intelligent citizen. There are certain traits in which you must score at least average to perform the duties of citizenship intelligently. These are Verbal intelligence, People interest, Reading and Social Studies achievements, Extroversion and Stability adjustments, and Physical health. If you are below-average in one or more of these traits, you should work hard to improve yourself. To think and act intelligently in our society, you must be able to read and comprehend daily events, co-operate with your associates, and be physically and mentally healthy. In addition to these minimum requirements for living in society, two other problems confront you—career choice and preparation, and your leisure time.

Your future career. Every problem which you face in life demands certain mental traits if you are to solve it successfully. This is most true of your career, and thus it is very important that you choose an occupational area (not a specific job) for which you have the intelligences, interests, achievements, adjustments, physical health, and socio-economic status to succeed. Here are five of the more important occupational areas and the traits they require for success:

CLERICAL occupations require above-average Verbal, Numerical, and Perception intelligence; Business interest; and Reading achievement. Your other traits can be average or below.

MECHANICAL occupations require above-average Visualization, Perception, and Co-ordination intelligences; and Mechanical interest. This occupational family includes such jobs as carpenter, craftsman, chauffeur, factory worker, machine operator, mechanic, plumber, repairman, and toolmaker.

SALES occupations require above-average Fluency and Memory intelligences; Business, Sales, and People interests; Expression achievement; and Extroversion and Ascendancy adjustments.

SCIENTIFIC-TECHNICAL occupations require above-average Verbal, Reasoning, and Numerical intelligences; Scientific interest; Self-reliance adjustment; and Socio-economic background.

EXECUTIVE-ADMINISTRATIVE occupations require above-average Verbal, Reasoning, Fluency, and Memory intelligences; Business, Sales, and People interests; Extroversion, Ascendancy, Drive, and Self-reliance adjustments; and Socio-economic background.

Your recreations. Your student and adult lives are not all work and no play. You will enjoy your hobbies and other leisure more if you select them in areas in which you have ability. For example, model building is most enjoyable to the individual with above-average Visualization, Perception, and Co-ordination intelligences, and Mechanical interest. Sewing requires Visualization, Perception, and Co-ordination intelligences, and Aesthetic interest. You will find your time both well and profitably spent in a part-time selling job if you are above-average in Fluency and Memory intelligences; Business, Sales, and People interests; and Extroversion and Ascendance adjustments. Writing is a hobby which is most enjoyed if you are above-average in Verbal and Fluency intelligences; Literary interest; and Expression achievement. The best athletes are those with above-average Visualization, Perception, and Co-ordination intelligences; and Natural interest.

* * * * *

And so on, for all the various types of activities you may consider entering as you progress through life. Each makes its peculiar demands upon your mental equipment. By knowing yourself and your strengths and weaknesses, you are in much better position to predict and control your future, to make your own*decisions, and to plan ahead wisely.

CHART 29. SPECIMEN PROFILE and INTERPRETATION I

(Continued)

Mary Ellen Smith is a senior, age 17. Her above-average performances are in Verbal, Numerical, and Perceptual intelligences; and Business interest. She is below-average in Visualization intelligence; Scientific, Literary, Aesthetic, Mechanical, and Natural interests; Physical Science achievement; and Socio-economic status.

From the standpoint of citizenship, Mary Ellen meets the minimum requirements. Her profile indicates a clerical career; and since her achievement has been satisfactory in the commercial course of study, a clerical job would undoubtedly be her best choice—with an eventual goal of private secretary. Mary's leisure activities are questionable at the present time as reflected in her profile, and a good portion of her guidance in the senior year should be devoted to the broadening of her recreational horizon. Particular attention should be paid to improving her Literary and Aesthetic interests, and this task should not be too difficult since her intelligences and achievements related to these interests are average and above. Some psychologists would maintain that additional information of a subjective character is also necessary to establish the alternatives which might need to be considered.

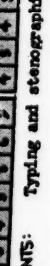
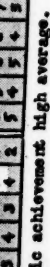
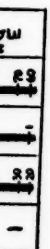


Chart 30. Specimen Profile and Interpretation II

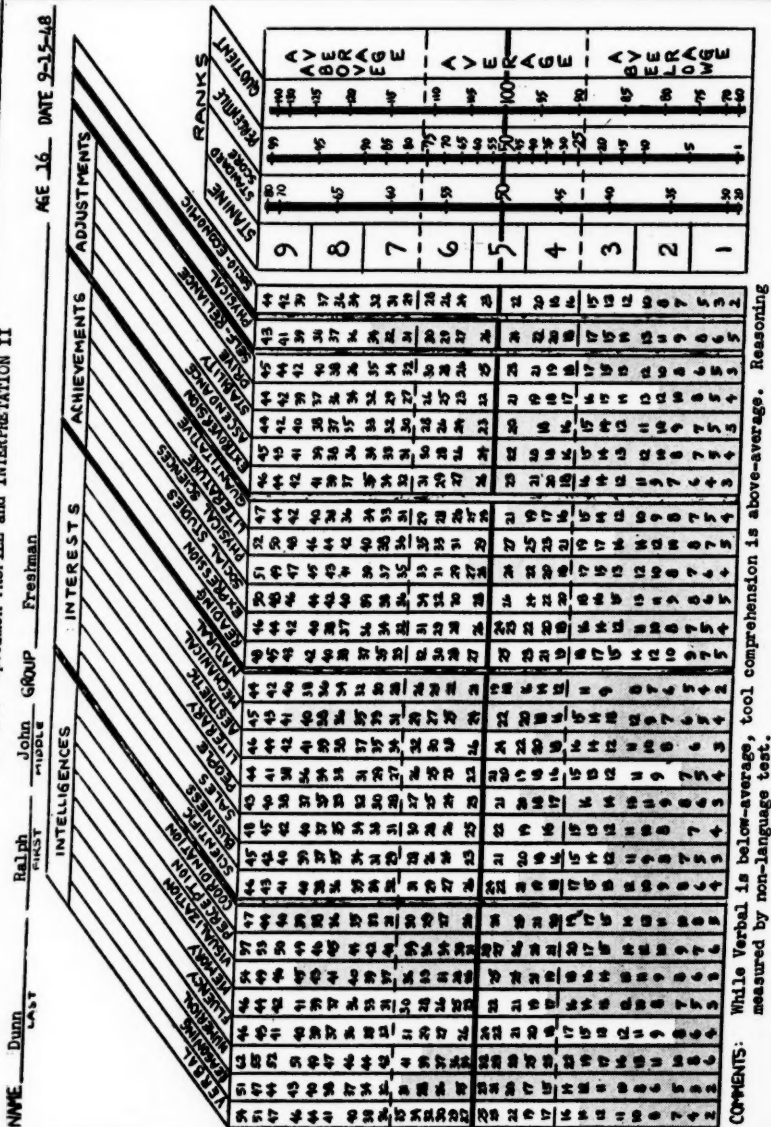


CHART 30. SPECIMEN PROFILE and INTERPRETATION II

(Continued)

Ralph Dunn is a freshman, average in grade. Ralph's above-average performances are in Visualization, Perception, Co-ordination, and Tool Comprehension intelligences; Mechanical and Natural interests; and Physical health. He is below-average in Verbal and Fluency intelligences; Business and Literary interests; Reading, Social Studies, and Literature achievements; Drive and Self-Reliance adjustments; and Socio-economic status.

Ralph's career points toward the mechanical job family, and a manual training or shop curriculum. His Verbal intelligence and Reading achievement indicate that an academic course of study would be lost on Ralph and that comprehension of the written word will never be his *forte*. Thus the teaching method should emphasize nonverbal presentation as much as possible. Ralph should be placed in a remedial reading class with the goal of bringing him to average achievement so he may be aware of the past and present events in our culture.

CHART 31. SPECIMEN PROFILE and INTERPRETATION III*(Continued)*

Joseph Moore is a senior, one year over-age in grade due to an illness in his freshman year. Joe's above-average performances are in the Verbal, Fluency, and Memory intelligences; Business, Sales, and People interests; Expression achievement; and Extroversion and Ascendance adjustments. He is below-average in Visualization and Co-ordination intelligences; Mechanical and Natural interests; and Physical health.

Joe's profile indicates that he meets the requirement of an intelligent citizen and should have little trouble in finding recreation in line with his abilities and interests. He should probably keep clear of either career or recreational activities in the mechanical area. Joe's profile indicates a career choice in the sales job family. He has the intelligences, interests, and adjustments required for successful selling. This type of job is also more in accord with his below-average status in physical health in that he will be active rather than sedentary during his eight-hour working day.

CHART 32. SPECIMEN PROFILE and INTERPRETATION IV*(Continued)*

Betty Ann Kohler is a sophomore. Her mental strengths are in the Verbal, Reasoning, Fluency, and Memory intelligences; People and Literary interests; Reading, Social Studies, and Literature achievements; Ascendance adjustment; and Socio-economic background. Her weaknesses are in Visualization and Co-ordination intelligences; Business, Natural, and Mechanical interests; and Physical Science achievement.

Betty's outlook for further education, life, and career are good. She has no mental weaknesses that are serious. Her strengths point to an intelligent member of society, a college education, a professional career, and numerous leisure time outlets. Her profile indicates the social service job family as a counselor, personnel director, social worker, or teacher. A nursing career is not suggested because of her Scientific interest and Physical Science achievement standings.

(Continued)

John Richey is a freshman. He is above average in Verbal, Reasoning, Numerical, Visualization, and Perception intelligences; Scientific and Literary interests; Reading, Physical Science, and Quantitative achievement; and Drive and Self-reliance adjustments. His mental weaknesses are in Fluency intelligence; Business and Sales interests; Extroversion and Ascendancy adjustments; and Socio-economic status.

John presents a very admirable mental study—with primary emphasis on the scientific-technical area. His profile is very similar to that of the outstanding research man in business and industry. John's training should probably be oriented to a professional career in this job family. His low Socio-economic status is a barrier to his financing a college and postgraduate education, but with proper education and guidance, John should be able to obtain scholarships without difficulty. He should be guided into extracurricular activities of a social nature to improve his introverted and submissive adjustments. His present profile is that of a well-informed citizen of his age.

STUDENT PROFILE AND ITS USERS

Copies of the student profile may be distributed to five individuals: the school administrator, the teacher, the student himself, his parents, and community planners. What implications and uses can each make of the profile?

School administrator. The school administrator needs objective facts about the student personnel for his policy-making decisions. Knowing the status of his school as a whole and of sub-groups within the school, he is in a better position to translate educational philosophy into administrative action. Composite profiles furnish him invaluable information for planning and revising curricula, methods, and materials of instruction; for developing procedures of student admission, placement, grouping, and transfer; for setting standards for hiring, training, supervision, and evaluation of teaching personnel; and for comparing his student population with that of other schools and regions—in brief, test data provide the administrator another factual base for making decisions which will be far-reaching in their execution.

Teacher. The teacher is the person who must translate education and guidance into specific actions. She must know her students and their potentials as early as possible and as completely as possible. She is one who by daily contact with the student sees the effects of curriculum, methods, and materials of instruction on his progress; and the one who must make slight modification in these procedures to fit each individual in her class. It is to his teacher that the student looks for advice and guidance, and she is in the position to lead him wisely—providing she knows the student. For all of these day-in-day-out activities, the student profile has a contribution in that it provides the teacher objective information on which to base her associations with each student. The profile tells where the student is and offers indications of how far he may go. Having found this starting point, the teacher is readier to develop his instructional plan.

The special teacher, or counselor, whose task it is to aid the student in planning his future, has probably the greatest use for the profile—for she must look beyond the present year, beyond the school itself, and into the the student's adjustment to adult life and occupations. She must aid the student in planning his cultural education and his vocational training. For the counselor, the student profile is a necessity in order to give the student sound advice. Without factual information about his intelligence, interest, achievement, adjustment, physical, and background status, the counselor is often in the position of the blind leading the blind. Prediction and thus control of human behavior is based on facts; and without such facts, counseling and guidance have little rationale.

Student. The student is the person about whom all this discussion centers. How much should he know about his profile—really about himself? The Socratic dictum of "Know Thyself" is as applicable to education and guidance as to living. The old viewpoint, that the less the student knew of his potential and progress, the better, is gradually being replaced by the self-appraisal philosophy. The more the school can aid the student to realize his strengths and weaknesses and to make his decisions on objective facts about himself, the better he can co-operate in his education and guidance and the sooner will he be able to take his place in adult life. Thus the student should receive a copy of his profile and its interpretation and use it as one basis for decisions about his future.

The self-appraisal or career class has, as its philosophy, student insight into his problems. Thus, in such classes the students take the tests, score them themselves, prepare their own profiles, discuss the meaning and significance of their standing on the various traits, and investigate the various course and career areas for which they are best fitted.

Parent. The parent of today wants to know about his child and looks to the school for facts about this "bewildering offspring." The student profile may be shown to the parent and explained to him to give a better understanding of his child's strengths and weaknesses. The family is still very much a major element in our society; and the better the parent understands the child as the school sees him, the less chance there is for conflict between educational and parental guidance.

Community. Lastly, the community, the aggregate of persons and families, should be aware of the potentialities and weaknesses of its rising generation. The composite school profile is of concern to the community as a whole, although averages on scores for a school or sub-group do not interpret easily on a basis of student profiles. The student's interests and personality are subject to the modifications and influences of subject data which may not lend itself to the mechanics of charting. Nevertheless, the profiles are the most objective means, which can be available, for indicating the status of individuals, and a composite can be significant as a means of opening up approaches to community problems. Business and industrial concerns within the community will be especially interested in the profile as an indicator of the caliber of future personnel. To those students who have the potential but not the means for further education, the community may lend its support. For over-all planning, the community leaders may well look to the strengths and weaknesses of the school population for its direction.

REFERENCES

WHILE this monograph has been written to cover the broad aspects of psychological testing in the modern secondary school, it should be considered merely an introduction to the field of tests and measurements. Literature in this area is contained in a variety of sources, which may be grouped under two main headings: references on tests and measurements, and publications in areas related to testing such as guidance, counseling, and so on.

TESTS AND MEASUREMENTS

A number of books are available which discuss various phases of psychological testing. The usual topics covered include: types of tests (by trait measured, type of questions, speed *versus* power, varieties of scores), history of measurement, characteristics of tests, test construction, record-keeping, statistical interpretation of test results, and so on. A representative list of books on testing may be set down as follows:

- Bingham, W. V. *Aptitudes and Aptitude Testing*. New York: Harper and Brothers. 1937.
- Darley, J. G. *Testing and Counseling in the High School Guidance Program*. Chicago: Science Research Associates. 1943.
- Freeman, F. N. *Mental Tests*. Boston: Houghton Mifflin Company. 1939.
- Froelich, C. P., and Benson, A. L. *Guidance Testing*. Chicago: Science Research Associates. 1948.
- Garrett, H. E., and Schneck, M. R. *Psychological Tests, Methods and Results*. New York: Harper and Brothers. 1933.
- Greene, E. B. *Measurements of Human Behavior*. New York: Odyssey Press. 1941.
- Greene, H. A.; Jorgensen, A. N.; and Gerberich, J. R. *Measurement and Evaluation in the Secondary School*. New York: Longmans, Green and Company. 1943.
- Hawkes, H. E.; Lindquist, E. F.; and Mann, C. R. *The Construction and Use of Achievement Examinations*. Boston: Houghton Mifflin Company. 1936.
- Remmers, H. H., and Gage, N. L. *Educational Measurement and Evaluation*. New York: Harper and Brothers. 1943.
- Ross, C. C. *Measurement in Today's Schools*. New York: Prentice-Hall, Inc. 1947.
- Traxler, A. E. *Techniques of Guidance: Tests, Records, and Counseling in a Guidance Program*. New York: Harper and Brothers. 1945.

Few periodicals are devoted exclusively to tests and measurements. Kuder's *Educational and Psychological Measurement* (917 Fifteenth Street, N.W., Washington 3, D.C.) is such a journal. The *Review of Educational Research* (American Educational Research Association, Washington 6, D.C.)

contains an excellent summary of psychological tests and their uses every three years (October 1932, June 1935, June 1938, February 1941, February 1944, February 1947). Other journals containing articles on testing include the *Journal of Educational Research* (University of Wisconsin, Madison 6), *School Review* (University of Chicago Press, Chicago 37), *National Association of Secondary-School Principals Bulletin*, *Journal of Applied Psychology* (American Psychological Association, 1515 Massachusetts Ave., N.W., Washington 5, D.C.), *Journal of Consulting Psychology* (American Psychological Association), and *Journal of Educational Psychology* (Warwick and York, New York).

It is often desirable to obtain a short summary or review of a particular test. The Manual for the test itself is the primary source and may be obtained by purchase of a specimen set from the publisher (see Chart 2). In addition, there are a few sources devoted to reviews of published tests: Buros' *Mental Measurements Yearbook* (Rutgers University Press, New Brunswick, New Jersey, 1938, 1940, 1948), Hildreth's *Bibliography of Mental Tests and Rating Scales* (Psychological Corporation, 1933, 1939, 1946), and South's *Index of Periodical Literature on Testing, 1921-1936* (Psychological Corporation, 1937). *Psychological Abstracts* (American Psychological Association), *Education Index* (H. W. Wilson Co., New York), and *Guidance Index* (Science Research Associates, Chicago) summarize new tests, books, and articles on testing. The majority of educational and psychological journals review new materials in the tests and measurements field.

Since statistics play an important part in the interpretation and application of test results, five well-known texts in this field may be listed in order of least to most difficult presentation of psychometrics:

Lindquist E. F. *A First Course in Statistics*. New York: Houghton Mifflin Company. 1942.

Thurstone, L. L. *Statistics in Psychology and Education*. New York: Macmillan Company. 1935.

Garrett, H. E. *Statistics in Psychology and Education*. New York: Longmans, Green and Company. 1947.

Guilford, J. P. *Psychometric Methods*. New York: McGraw-Hill Company. 1936.

Edwards, A. L. *Statistical Analysis for Students in Psychology and Education*. New York: Farrar and Rinehart. 1946.

PUBLICATIONS IN RELATED AREAS

To attempt to list the publications in areas related to tests and measurements would be a large task—since measurement of individual differences has application in almost all fields of education and guidance. Below are a few selected references which have fairly direct relation to the field of psychological testing:

- American Youth Commission. *Youth and the Future*. Washington, D.C.: American Council on Education. 1942.
- Chisholm, L. L. *Guiding Youth in the Secondary School*. New York: American Book Company. 1945.
- Cole, L. *Psychology of Adolescence*. New York: Farrar and Rinehart. 1942.
- Erickson, C. E. *A Basic Text for Guidance Workers*. New York: Prentice-Hall 1947.
- Forrester, G. *Occupations: A Selected List of Pamphlets*. New York: H. W. Wilson Company. 1948.
- Hamrin, S. A., and Erickson, C. E. *Guidance in the Secondary School*. New York: D. Appleton-Century Company. 1939.
- Kaplan, O. J. *Encyclopedia of Vocational Guidance*. New York: Philosophical Library, 1948.
- Koos, L. V., and Kefauver, G. N. *Guidance in Secondary Schools*. New York: Macmillan Company. 1932.
- Lefever, D. W.; Turrell, A. M.; and Weitzel, H. I. *Principles and Techniques of Guidance*. New York: Ronald Press. 1941.
- Monroe, W. S. *Encyclopedia of Educational Research*. New York: MacMillan Company. 1941.
- National Society for the Study of Education. *Guidance in Educational Institutions*, 37th Yearbook, Part I. Chicago: The University of Chicago Press. 1948.
- National Society for the Study of Education. *The Measurement of Understanding*, 45th Yearbook, Part I. Chicago: The University of Chicago Press. 1946.
- Paterson, D. G.; Schneider, G. G.; and Williamson, E. G. *Student Guidance Techniques*. New York: McGraw-Hill Book Company. 1938.
- Shaffer, L. F. *Psychology of Adjustment*. Boston: Houghton Mifflin Company. 1936.
- Shartle, C. L. *Occupational Information*. New York: Prentice-Hall Company. 1946.
- Strang, Ruth. *Pupil Personnel and Guidance*. New York: Macmillan Company. 1940.
- Warters, J. *High School Personnel Work Today*. New York: McGraw-Hill Book Company. 1946.
- Williamson, E. G., and Hahn, M. E. *Introduction to High School Counseling*. New York: McGraw-Hill Book Company. 1940.

News Notes

NEA'S PLATFORM TO STRENGTHEN SCHOOLS—Prompt consideration by the 81st Congress of Federal Aid to Education is one plank in a 10-point platform which the National Education Association announced to strengthen education in the United States during the coming year. President Truman, in an American Education Week statement, described the schools as "custodians of freedom." "This is a time," he added, "which challenges our coming citizens to grow in stature and wisdom. It is they who for the future must strengthen the foundations of freedom at home and stand shoulder to shoulder with other freedom-loving peoples throughout the world. Let us pledge ourselves anew during this week to assure them the education and the opportunity which they need in this great endeavor." Federal aid to education, Dr. Givens said, is essential "to remove the threat to our nation's security caused by millions of children who today are denied a fair chance to get a basic education."

Conditions which the National Education Association regards as a threat to the nation's security were listed as follows: 4,000,000 children of school age are not enrolled in any school; 2,800,000 persons, 14 years of age and older, are illiterate; 8,197,000 persons, 14 years of age and older, have less than a fifth-grade education; 659,000 persons, about twice the number of combat divisions deployed in the South Pacific operations of World War II, were rejected solely for educational deficiencies; although 100,000 new elementary teachers will be needed annually for the next ten years, the output of our colleges which prepare teachers in 1948 was about 20,000 persons prepared for elementary-school positions, of whom less than 12,000 were four-year college graduates; our public school systems are not being prepared to receive the 9,000,000 more children who are expected to be enrolled in 1957 than were enrolled in 1947. Here is a huge problem which our nation must face.

If the American principle of equal opportunity is to mean anything, he added, "it must mean that accident of birth in a poorer state should not deprive a child of educational advantages. Education is too vital to the nation, as well as to the nation's children, to be denied or lost due to the inability of a state to provide it. The harmful effects of ignorance and its accompanying train of evils are not confined by state boundary lines." In addition to Federal aid to education, the action program which NEA will seek to advance in the year ahead was listed by Givens as follows:

1. *Preservation of Democracy.* All schools have an obligation to teach the rights, privileges, and the responsibilities involved in living in a democracy. It is the responsibility of the schools to indoctrinate our youth in the American way of life so that they know it, believe in it, and live it continuously. We urge all members of the teaching profession to expose and obstruct the activities of all groups which have as their objective the undermining of the Constitution of the United States.

2. *Education for World Understanding.* We believe the teaching profession must accept the responsibility to educate our youth in international understanding, so they may have a basic preparation to face the problems of living in an interdependent world. The Association urges that all schools provide for systematic instruction about the United Nations, its history, structure, purpose, accomplishments, and problems. We advocate that all teacher educational institutions provide instruction and experiences that will insure an opportunity to prospective teachers to acquire the attitudes and practices necessary to teach world understanding.

3. *Reorganization of Administrative Units.* Citizens of every state are urged to give serious attention to the reorganization of school districts into larger administrative units with sufficient resources and pupils to provide economically adequate educational opportunities for all.

4. *Professional Standards.* To insure competent teachers, the NEA urges adoption of these standards: (a) The minimum educational qualification for all teachers shall be a bachelor's degree with an in-service educational requirement for additional work toward a master's degree or its equivalent; (b) Issuance of emergency certificates shall be discontinued; (c) Minimum salaries with adequate annual increments shall be established which recognize the services and responsibilities of the teacher and compensate for thorough professional training.

5. *State and County School Administrators.* We urge an upward revision of educational qualifications for state and county school administrators.

6. *Expansion of School Services.* The public school program should be expanded to provide summer camping, recreational and creative activities. Public education should be extended through grades 13 and 14.

7. *Teacher Recruitment.* National, state, and regional conferences should be conducted to attract persons of adequate scholastic ability, high character and integrity, and outstanding personality to the profession of teaching. Public and private scholarships should be made available for assistance to worthy students when financial help is necessary.

8. *United States Office of Education.* The development of education, whether at the local, state or national level, should be placed above all temporary and partisan political issues with appropriate administrative arrangements to safeguard the integrity of the educational process. To this end the Association urges Congress to make the United States Office of Education an adequately-financed, independent agency, headed by a national board of education. This board should be appointed for long overlapping terms by the President with the consent of the Senate. It further recommends that a professionally-qualified commissioner of education be selected by the board to serve as its executive officer.

9. *Professional Responsibilities.* All teachers should strive to improve existing practices and standards in school policy by participating in groups working for the solution of school problems, such as curriculum revisions, teacher welfare, opportunity for advancement, salary schedules, tenure, sick leave, and retirement benefits.

TEACHERS ARE NEEDED—The American Council on Education, Washington 6, D.C. has just published *Wanted: 30,000 Well-Prepared Teachers for Community Colleges*. This report of 60 pages (\$1.00) is an outgrowth of a conference. The Council on Co-operation in Teacher Education is a sponsor of this report, which covers specifically the need for well-prepared instructors for junior colleges, technical institutes, and community colleges in the next ten years.

READING CLINIC INSTITUTE—The Sixth Annual Reading Clinic Institute, Temple University, Philadelphia, Pa., has been announced for the week of January 31 to February 4, 1949, inclusive. The chief emphasis at this institute will be on semantic analysis and the development of concepts. Conclusions from previous institutes on differentiated instruction, integrated language arts approach, and reading needs in content areas will be summarized. The program will be differentiated in terms of developmental, corrective, and remedial reading in elementary and secondary schools and colleges. Activities will include demonstrations, special laboratory periods for observation and participation, seminar discussions, staff meetings, and lectures. The general themes for each day include semantic analysis techniques, appraisal and development of concepts, assimilative and critical reading, reading needs in curriculum areas, instructional materials, and differentiated guidance. Integrated with these themes, special sessions will deal with reading readiness, phonetics, word analysis, directed reading activities, guidance of independent reading, informal reading inventories, specific corrective, and remedial procedures. Registration must be verified prior to the date of the institute. For a copy of the program, requirements for the evaluation meetings, and other information, write to: Emmett Albert Betts, Director, The Reading Clinic, Department of Psychology, Temple University, Philadelphia 22, Pa.

SOMETHING DIFFERENT FOR HIGH SCHOOLS—A new call for high schools willing to do something different for their pupils comes from the Life Adjustment Education Commission. The Commission held a 5-day session in Washington, D.C., attended by 150 high-school principals, secondary-school officials, and representatives from state departments of education. Needed are high schools, said the Commission, which are courageous enough to break away from traditional curriculums and introduce courses of study which make sense for pupils who plan neither to go to college nor to enter the vocational training programs. The Commission decided that it will carry out its ideas through state steering committees, to be appointed by state departments of education. These in turn are to search for high schools which have introduced good life adjustment education programs, on the one hand, and for schools which are willing to introduce such courses, on the other. The Commission said that the guiding principles of high schools offering life adjustment education should be the following:

1. *Respects individual worth*: The supreme test of life adjustment education shall be in terms of individual development. This is in contra-distinction to the prevailing goal of pupil "adjustment" to statistical norms such as "typical" or "average" and to rigidly patterned curriculums.

2. *Enrolls and retains all youth*: Secondary schools developing life adjustment education seek to enroll, retain, and meet the needs of all normal adolescents

who are not yet ready for the next step, such as a full-time job or entering college as a student.

3. *Stresses problems of living:* Learning experiences required of all are selected and planned for inclusion in life adjustment education programs in terms of common, recurring problems of living faced by all people rather than restricted to college entrance requirements or other specialized needs of the relatively few.

4. *Emphasizes direct experience:* In life adjustment education programs, the emphasis is upon direct pupil-teacher planning, sharing, and participation in real-life experiences while seeking solutions to individual, social, and civic problems. Such an approach requires the abandonment of the concept of "extra-curricular activities" and makes excursions, travel, community surveys, school-work programs, study and hobby clubs, and any other form of direct experience for pupils integral parts of the educational program.

REASONS FOR JUVENILE DELINQUENCY—The New York City Youth Board is using the southeastern Bronx as a study area in an attempt to find out what the city has and lacks in the way of facilities for youth. The state legislature created the board and appropriated two million dollars for this research into the juvenile delinquency problem. The research committee will look into the housing difficulties, employment, vocational training, and recreation facilities for youth. The board was given the power to initiate all means of combatting juvenile delinquency. Heads of various city departments are on the executive committee.

There are to be several neighborhood conferences and panels about youth to try to establish a community action program to be undertaken by public and private agencies in co-operation with the youth board. It is expected that the youth board may be able to extend financial aid to existing community centers. Money has already been appropriated this past summer to enlarge recreational playgrounds in the city. The panel discussions are expected to lead to written recommendations for specific action to be taken by the board to remedy the situation.—*Morris Piper, Morris High School, New York, New York.*

WHY STAY IN SCHOOL?—This is a booklet by Florence Taylor of the National Child Labor Committee published to help young people understand the value of a high-school education. It is aimed especially at the young people thinking of leaving school and is designed to help them with their problems. Classroom sets of this Life Adjustment booklet are accompanied by a poster to stimulate group interest and an Instructor's Guide to help the teacher in presenting the material covered. This booklet may be secured for 75 cents from Science Research Associates, 228 South Wabash Avenue, Chicago 4, Illinois.

RECOMMEND U. S. OFFICE OF EDUCATION BE MADE AN INDEPENDENT AGENCY OF THE FEDERAL GOVERNMENT—Removal of the United States Office of Education from the Federal Security Agency was recommended by administrators from 40 states, in a statement released by Dr. Willard E. Goslin, superintendent of schools at Pasadena, California, and president of the American Association of School Administrators. They unanimously urged that Congress establish the United States Office of Education as an independent agency of the

Federal government under the general control of a policy-making board of laymen appointed by the President with the consent of the Senate. The complete text of the statement issued by the school administrators follows:

"We hold it to be consistent with American concepts of representative government and essential to the American way of life that public education shall be under the general control of state and local boards of education. These boards should be broadly representative of the general public, nonpartisan in nature, charged with no other governmental functions, and responsible for the general policies under which professional educators as executive officers of such boards shall administer the public school systems. This is the generally accepted pattern for the administration of public education in the United States.

"While local lay control of public education must be preserved, the federal government is destined to play a role of increasing importance in the promotion of education through research, technical advisory services, professional leadership and financial aid to the states. These obligations of the federal government must be met through the U. S. Office of Education. The integrity of the U. S. Office of Education is of vital importance. It must be safeguarded. We therefore urge the Congress:

- "1. To establish the U. S. Office of Education as an independent agency of the federal government under the general control of a policy-making board of laymen broadly representative of the general public to be appointed by the President with the consent of the Senate to long overlapping terms.
- "2. To provide that a professionally qualified and competent U. S. Commissioner of Education shall be appointed by the board to serve as its Executive Officer and head of the staff of the Office of Education.
- "3. To provide sufficient funds for personnel, travel, printing, and other necessary expenses to enable the Office of Education to assume professional leadership and provide services commensurate with the national stake in education."

BEST TEACHER CONTEST—The Quiz Kids officially opened their fourth annual "Best Teacher Contest" on the Quiz Kids program on Sunday, November 14, immediately following the nation-wide observance of American Education Week. Once again, school children all over America will help find the best teacher of the year. All elementary and high-school students are invited to write letters on the subject, "The Teacher Who Has Helped Me Most." The letters will be judged by a group of eminent educators, who will evaluate the qualifications of the teachers nominated and conduct personal investigations among the finalists to determine the top-winning teacher.

The "Best Teacher of 1949" will receive national fame, a cash prize of \$2,500 for a full year of study at any university or college, an appearance on the Quiz Kids program, and a week's entertainment in Chicago with all expenses paid. In addition, two other teachers will receive second-place cash awards of \$1,000 each. Each teacher nominated for the award will receive an honorary certificate suitable for framing in her (or his) classroom.

The student writing the letter nominating the winning teacher will be awarded first prize of a \$1,000 U. S. Security Bond. For the two second best letters, awards will be two \$500 bonds. Twenty streamlined bicycles will go for the next 20 winning letters, and the next 30 winners will receive other special merchandise prizes. Five hundred more youngsters will each be awarded an honor certificate and a gold-plated Quiz Kids pin making them honorary Quiz Kids. Complete information concerning the rules of the contest, *etc.*, may be secured from Quiz Kids, 8 South Michigan Avenue, Chicago 3, Illinois.

COMMITTEE PLANS CAMPAIGN TO EXPAND CREDIT FACILITIES—A campaign to expand credit union facilities for the teachers of the United States was planned at a meeting of the Committee on Credit Unions of the National Education Association. More than 100,000 teachers now belong to credit unions having assets of more than 23 million dollars and doing an annual loan business in excess of 11½ million dollars, the committee reported. Teachers colleges and universities will be urged to include the credit union as a part of their study of teacher-welfare programs.

SCIENCE TEACHERS ASSOCIATION PREPARES NEW STUDIES—Five nation-wide studies of importance to science teaching will be made during the next three years by the Advisory Council on Industry-Science Teaching Relations of the National Science Teachers Association, an NEA department. Areas planned for inclusion in the studies are: ways for teachers to use science literature furnished by industry; school needs in the way of industrial teaching materials and fields not currently covered; types of industry-sponsored programs that will give the best results for industry and for the schools; exploration of new science teaching methods incorporating industry-sponsored materials; and the development of National Science Teachers Association services to teachers for the purpose of increasing memberships in, and the effectiveness of, that organization.

COMMISSION PLANS NATIONAL ACTION PROGRAM TO MEET TEACHER SHORTAGE—A series of eight regional conferences throughout the United States will be held during January and February by the National Commission on Teacher Education and Professional Standards of the National Education Association as a part of its action program to meet the critical teacher shortage anticipated during the next ten years in the elementary field. Major lines of action in the planned program include:

1. An analysis in each state for each year during the next ten years of enrollments, teacher needs, and classroom and building construction needs;
2. A vigorous drive in each state to eliminate those factors known to have deterred young people from entering the elementary teaching field;
3. An intensive drive in each state to secure increased financial support to meet the housing and teaching needs brought on by increased enrollments;
4. State-wide conferences of lay educators to plan programs of immediate action;
5. Intensive selective recruitment campaigns in every community;
6. Effective guidance programs both at the secondary level and in college for prospective teachers;

7. Redirection of young people now enrolled in secondary teacher preparation programs, and an intensive short-term college elementary teacher preparation program for teachers who have already completed preparation for the secondary schools;

8. Concerted general appeal to develop an appreciation on the part of the public of the importance of elementary teaching.

PEPSI-COLA SCHOLARSHIPS DISCONTINUED—The Pepsi-Cola Scholarship Board announced that its scholarship selection program for 1948-49 has been cancelled. The Directors of Pepsi-Cola Company have decided to discontinue providing additional scholarships at this time. Since 1945, four groups of winners of four-year college scholarships have been selected (490 students) and 26 winners of the three-year graduate fellowships have been named. Some of the scholarship holders have already graduated. A few are having their scholarships held until their return from the armed services. This year, 446 of these winners will be in college—in 177 colleges—and payments to them will, of course, be continued for the remainder of their college careers as provided in their scholarships.

ARE YOU A SUPERIOR TEACHER?—A superior teacher, according to 1,000 North Carolina high-school seniors, is friendly, patient, kind, honest, cheerful, courteous, and has a sense of humor. These characteristics were mentioned more often by these seniors than any other. "Knows subject" ranked second in frequency of mention by seniors, with "understands pupils" a close third. "Knows how to teach," "makes work interesting," and "keeps order, manages pupils well, has good discipline" rank fourth, fifth, and sixth, respectively, as the marks of a good teacher, according to these seniors.

Other characteristics on a decreasing scale were the following: enjoys teaching, willing to help pupils, takes time to explain, respects the student, knows more than is in the book (does not stick too closely to book), makes pupil want to work, has good educational stability, is not over-critical, has faith in pupils, dresses neatly, permits pupils to help plan work, minds own business, does not gossip, controls temper, uses psychology, invites questions, returns assignments, takes interest in community, has a pleasant voice, and is not too old.—*North Carolina Public School Bulletin*.

DISABLED AMERICAN VETERANS—A special study unit on the wartime disabled veteran for high-school civics classes has been prepared by the Disabled American Veterans and is available without charge on request. Inquiry should be made to the National Public Relations Department of the DAV, Room 2801, 11 South LaSalle St., Chicago 3, Illinois. The purpose of the unit is to acquaint high-school students with the problems of the disabled veteran. It is designed to develop understanding in the students—future voters and taxpayers.

Gen. Jonathan M. Wainwright, hero of Bataan and Corregidor, National DAV Commander, said in announcing the unit: "We are convinced that education in this subject is an important step forward in informing our future citizens of the magnitude and nature of the problem facing them in protecting the rights of our disabled veterans." He urged civics teachers and high-school author-

ities to schedule the study unit during the school year. The 34-page unit of study deals with types of disabled veterans, history of war handicapped, the disabled veteran in a democratic society, rehabilitation, and legislation.

FREEDOM TRAIN—Work on the railroad coaches to be used for exhibit of historic documents on the New York State Freedom Train has begun, and the train will start on its journey through the state when preparations are complete. The route and schedule for the train will be arranged to permit the maximum number of school children and adults to see the exhibits. The 1948 legislature of New York State appropriated \$50,000 for expenses of the State Freedom Train. The New York Central Railroad is furnishing the equipment and operating services for the tour.—*Bulletin to the Schools*, University of the State of New York.

EVALUATING THE TEACHER—A nation-wide survey recently has been conducted by Howard Wilson of Loyola University on "What Is the Good College Professor According to 1948 Standards." This survey indicates that college students have some definite opinions and are very adept at answering this question. The "Wilson Teacher Appraisal Scale" has been devised to facilitate the grading of teachers by their students. While this scale was made for evaluation by college students, the form can be used by high-school students as a technique in evaluating their teachers. Copies of this form may be obtained from the Economic Institute, Box 1160, Chicago 90, Illinois, at a cost of \$1.50 for 50 copies.

COMMITTEES DEVELOP AMERICAN HISTORY FILMS—Two groups of the Audio-Visual Committee of the National Council for the Social Studies held meetings in Washington and New York during October in connection with American history films which are being made available for schools by companies of the motion picture industry through the Motion Picture Association of America and its non-profit film distribution affiliate, Teaching Film Custodians.

As a short-term project the committee is editing instructional versions of significant theatrical films for use in American history classes in secondary schools and colleges. These include: "Driven Westward" (Westward movement) adapted from *Brigham Young*; "Winning Our Independence" (Revolutionary War) adapted from *The Howards of Virginia*; *Drums Along the Mohawk* (Revolutionary period); "Johnson and Reconstruction" (Reconstruction after the Civil War) adapted from *Tennessee Johnson*.

As a long-term project, scheduled for completion in 1949, the committee is bringing up to date *Land of Liberty*, a motion picture history of the United States, currently in use in schools. The addition to *Land of Liberty* will stress the history of the last decade, 1938-48, including the inauguration of the president in 1949.

JOURNAL REPRINTS OFFERED AS RECRUITMENT AID—Suggestions for teacher recruitment are contained in a four-page reprint of an article from the December, 1917 issue of the *NEA Journal*. Facts and figures about the need for teachers are illustrated by conditions in various states. The article is based on information prepared by the National Education Association, the National

Congress of Parents and Teachers, and the National Commission on Teacher Education and Professional Standards of the NEA. Free copies may be obtained from the National Education Association, 1201 Sixteenth Street, N. W., Washington 6, D. C.

NEA FORMS TRAVEL COMMITTEES—Travel committees are being formed by many local education associations to aid the NEA Division of Travel Service in planning tours to various regions of the United States. The committees assist in developing programs for tour members to meet local teachers, arrange for speakers and special observation of local industry. The Travel Division keeps the committees informed of all tour plans.

NEW TRAVEL PUBLICATION INTRODUCED—A new publication, *NEA Travel News*, has been distributed to all members of NEA tour groups. Information is included in the publication concerning members of tour groups, tour conductors, and new books, articles and films dealing with areas visited by tour groups.

UNESCO's AIMS DESCRIBED—A series of four folders, a leaflet, and five-panel sets of posters on UNESCO have recently been produced by the UNESCO Relations Staff, Lake Success, New York, to aid the National Commission's program. The leaflet, entitled "UNESCO—What It Is, What It Does, and What You Can Do To Help," contains brief, factual information on UNESCO and the National Commission, together with suggestions as to how individuals and organizations may further UNESCO's aims in this country.

Two of the four-page folders carry excerpts and quotations from speeches and articles by prominent UNESCO leaders. A third contains a series of questions and answers suitable for radio programs, forums, and discussion groups. The remaining folder gives an outline to be used as a guide in preparing radio scripts on UNESCO. The six-color posters, which come in sets of five 18-by-24-inch panels, describe graphically the leading points of UNESCO's program, the work to be done, the co-operation needed throughout the world in furthering UNESCO's aims and ideals, and the way in which individuals may help.—National Commission News, Department of State.

A FRIENDSHIP MAP OF CHINA—The Friendship Press, 156 Fifth Avenue, New York 10, New York, has a new map (32" x 26") on China. This is one of a series of graded study and reading books, leaders' guides, plays, pamphlets, and maps produced by the boards of missions and education of many denominations co-operating through the Missionary Education Movement. The map is available in colors at 50 cents each.

KODASLIDE TABLE VIEWER ANNOUNCED—The Kodaslide Table Viewer, a completely new approach to the viewing of 2 x 2-inch transparencies, is announced by the Eastman Kodak Company, Rochester 4, New York. The new viewer, which has widespread application in the home, science, education, business, and industry, was introduced at the recent convention of the Master Photo Dealers and Finishers in Cleveland, Ohio. Differing widely from all present-day

viewers in both concept and design, the new unit is not a magnifying device for studying 2 x 2-inch transparencies. It is a complete projection system—including projector, slide changer, and screen—housed entirely in an attractive case which occupies less than 10 x 12 inches on a desk or table top. This new unit, because of the power of its lumenized optical system and because it incorporates a new type of projection screen which gives a more brilliant image with rear projection than any heretofore obtainable, is the first high-quality color slide projection system which can be used in a fully lighted room without loss of clarity or brilliance in the projected image. The image produced by the new viewer is rich in detail and entirely satisfactory under all conditions. Small groups of three or more people can easily view the undistorted image. The Kodaslide Table Viewer will be priced at \$95. An accessory carrying case will be available although the viewer can be carried without a case by a handle built into the top if desired.

STATE LAWS ON "EDUCATION FOR FREEDOM"—How many states require instruction on United States history? Do all states require teaching concerning the United States Constitution? What are the provisions in state laws governing the use of the American flag in public schools? Answers to these and many other questions pertinent to education for democracy are presented in a new publication of the Office of Education, Federal Security Agency, titled "Education for Freedom as Provided By State Laws." The bulletin was prepared by Ward W. Keesecker, Office of Education Specialist in School Legislation. Copies of this publication may be secured for 20 cents each from the Superintendent of Documents, Washington 25, D. C.

PREJUDICE AND DISCRIMINATION—Notable actors will be heard in a new "Lest We Forget" presentation of the Institute for Democratic Education, entitled *Stories to Remember*. The new radio series consists of thirteen 15-minute adaptations of well-known stories written by MacKinlay Kantor, Irwin Shaw, Carl Ewald, Dorothy Canfield Fisher, and others and is now being distributed to the nation's radio stations for broadcast as a public service feature. Designed to remind Americans that prejudice and discrimination have no place in our democracy, *Stories to Remember* represents a cross-section of stories on the problems of intergroup tensions, ranging from novels to popular magazines. *Stories to Remember* is the 12th series of "Lest We Forget" programs produced and distributed by the Institute for Democratic Education, New York.

The Institute's 11th series, *Lest We Forget—The American Dream*, won a First Award at the last Ohio State University Institute for Education by Radio and a Citation for Distinguished Merit from the National Conference of Christians and Jews. The Institute's sale to schools of its 10th series, *Lest We Forget—These Great Americans*, has gone so well that additional pressings have been made and are now again available at the special school rate of \$15 per set of 13 programs, including a discussion guide handbook for teachers. This is the series which dramatizes the stories of leaders in science, law, politics, social work, and labor, who devoted their lives to the American principle that all men are created equal. Earlier *Lest We Forget* series are still being distributed by the Institute free of charge on a permanent loan basis. Arrangements for the acquisition

of these audio-educational aids can be made by writing directly to the Institute for Democratic Education, Inc., 415 Lexington Avenue, New York 17, New York.

PORTRAITS OF GREAT COMPOSERS—The Hall and McCreary Company of Chicago 5, Illinois, has a series of duotone etchings of twenty great composers of music. Each is 8" by 7½" in size and contains on the back a biographical sketch of the composer pictured. The composers included in this packet are: Bach, Beethoven, Brahms, Chopin, Franz, Gluck, Gounod, Grieg, Handel, Hayden, Liszt, Mendelssohn, Mozart, Offenbach, Schubert, Schumann, Tchaikowski, Verdi, Wagner, and Weber. Price: 1 to 11 sets—\$1.50 each, postpaid; 12 to 49—\$1.35 each, postpaid; 50 or more—\$1.20 each, transportation extra.

FILMSTRIPS ON ETIQUETTE—A new series of five 35-mm. silent filmstrips on etiquette, intended for use in teaching the social graces to young people of high-school age, has been announced by the Text-Film Department of the McGraw-Hill Book Company. By means of dramatized situations in the everyday lives of teenagers, acted out in the filmstrips by actual high-school students, these Text-Films illustrate the fine points of the kind of personal behavior that makes for successful relationships with others—at home, in school, at work, and in social affairs. This film is correlated with the textbook, *Manners Made Easy*, by Mary Beery. They are available to individual users and film libraries through direct purchase from the McGraw-Hill Book Company, 330 W. 42nd St., New York 18, New York.

FILM ON THE SOUTH—*New Horizons*, a 16-mm. sound film that blends the story of rich Southern traditions with a report on the great strides of progress being made in that section of the nation today, is now ready for distribution. Sponsored by the Seaboard Air Line Railroad Company, prints are available without charge from the Princeton Film Center, Princeton, New Jersey. Spun in full, natural color, the story brings to the screen a brief record of the historic events that constitute the Southland's past: the first colonization well over three centuries ago, its leading part in the battle for independence, its ever-increasing supply of charm and hospitality, its many picturesque rural and urban settings. The South's many natural resources are shown, as cotton, tobacco, citrus and other crops are harvested in colorful settings. Its raw materials, including a wide variety of mineral riches, as well as lumber from the most extensive forest in the country, play a vital part in our national economy.

NEW FILMS ON NATURE OF DEMOCRACY—*The Nature of Democracy*, a series of seven discussional slidefilms, is announced by the Jam Handy Organization. This series is produced in color by Curriculum Films, Inc. The material in these films is based on extensive research and investigation. The subjects are designed for use in schools, church groups, cultural and labor organizations. Each film guides a discussion by the group. With each series there is a booklet of suggestions for properly using the series. Slidefilms are: 1. Democracy at Work, 2. Freedom of Religion, 3. Equality Before the Law, 4. Taking Part in the Government, 5. Freedom of Expression, 6. Education, 7. By and For the People. For details, address the Jam Handy Organization, 2821 East Grand Blvd., Detroit, Michigan.

FIVE NEW FILMS—Five new productions have been released by Coronet Films. These new 16-mm. sound-motion pictures (one reel, sound, color or black and white) are:

Making the Most of School—Reveals to students the infinite riches which school offers them beyond their day-to-day assignments. For students at the intermediate and junior high-school levels.

Your Thrift Habits—Teaches students a lesson in thrift. For students at the intermediate, junior high-, and senior high-school grade levels.

Installment Buying—Experience in buying furniture on installments dramatically demonstrates to students some of the pitfalls of installment buying and encourages them to make a complete investigation of installment credit, contracts, and interest rates before making purchases. For junior high to adult level.

Per Cent in Everyday Life—Students learn how useful a working knowledge of per cent can be to them. For students at the intermediate and junior high levels.

Geometry and You—Students will better appreciate the function of geometry when they see this demonstration of its everyday importance. For the junior and senior high-school grade levels.

During the past year CORONET has added to its library over sixty new instructional films. These productions have proved to be popular and effective teaching aids. In order to provide educators and the entire visual education field with an up-to-date reference for the complete CORONET Film Library, CORONET has just made available its new 1948-49 catalog. In addition to a short description of each production, the new catalog includes the recommended grade levels for which each film is designed, the educational collaborator, length, and price. One section of the catalog is devoted to full information on CORONET's arrangements for purchase, lease-purchase, and preview; also a complete list of the rental sources for these 16-mm. sound-motion pictures is provided. An excellent "Utilization Chart" in the back of the catalog lists the films alphabetically and suggests areas of study in which each is useful. Copies of this new catalog are now available without cost or obligation upon request to CORONET Films, Coronet Building, Chicago 1, Illinois.

NEW BRITISH FILMS—The following 16-mm. films are available from the British Information Services, 30 Rockefeller Plaza, New York 20, New York. *Callers Herrin'* (19 minutes—Rental \$2.50)—This is a colorful picture of the Scottish herring fisheries, showing what happens from the time the trawlers put out to sea until their catch reaches the family table. After the fish are netted and auctioned, the film follows processes of canning and kippering, as well as the swift delivery of fresh herring to the retail stores.

Designing Women (24 minutes—Rental \$3.75)—Shows the importance of good design in furnishing the home. Told in amusing story form, the film illustrates two methods of furnishing an apartment—the flamboyant, arty style cluttering impractical rooms; and the modern style which is simple, usable, and pleasing in appearance.

The Falkland Islands (14 minutes—Rental \$2.50)—This film describes the work being done by the British in Antarctica. The men who comprise the various

survey and meteorological units serve for a minimum of two years. They beam weather reports to shipping lanes and by constant surveys gradually map out the frozen lands of the South.

Power on the Land (17 minutes—Rental \$5.00—Technicolor)—Old-fashioned manual methods of planting and reaping are compared with modern machines which pick root crops; reap, bind, and thresh grain; and plant and water vegetables.

The Royal Wedding (30 minutes—Rental \$7.50—Technicolor)—Shows the grandeur and solemnity of the wedding of Princess Elizabeth and the Duke of Edinburgh.

Snowdonia (17 minutes—Rental \$5.00—Technicolor)—Situated in Northwest Wales, Snowdonia is famous for its beautiful scenery. This film offers scenes of its broad lakes and low-lying valley farms. It shows famous castles of great historic interest standing within their old fortifications. The camera follows the roads that wind through the mountain country. The Lyrian Singers present vocal accompaniments.

OVERSEAS TEACHER RELIEF FUND TO CONTINUE THROUGH 1948-49—

As the result of the enthusiastic response of teachers throughout the country to the Overseas Teacher-Relief Fund, the NEA executive committee has unanimously voted to continue the project in 1948-49. The campaign will be conducted through the local and state education associations in the same manner as it was last year. The fund opened last fall with an invitation to teachers to aid their colleagues in war-devastated lands. Thus far it has provided aid to the teachers of Albania, Austria, Belgium, Bulgaria, Burma, China, Czechoslovakia, Ethiopia, Finland, France, Germany, Greece, Hungary, Indonesia, Italy, Japan, Korea, Luxembourg, Netherlands, Norway, Philippines, Poland, Siam, United Kingdom (England, N. Ireland, Scotland), Corfu, Guam, Malta, and Okinawa. The executive committee did not determine, with finality, the use to which all of the funds from the 1948-49 campaign will be used, although there was agreement that emphasis should be placed on bringing overseas teachers to this country for an opportunity to study American education. No definite dates have been set for a nation-wide campaign. State associations may arrange for a concerted effort in any given state, or they can leave the matter of time up to the local associations which can plan campaigns at times suitable to them. The fund will be kept open through June, 1949, at which time it will be discontinued unless specifically extended by action of the NEA Representative Assembly or executive committee.

A total of \$261,633 had been spent or committed by October 1 to send food, clothing, books and educational materials abroad, and to enable some teachers to visit and study in the United States. Each teacher to whom food or clothing was sent also received a letter in his native language from Willard E. Givens, NEA executive secretary, explaining that the package was sent as a gift from the teachers of the United States through their local and state professional organizations affiliated with NEA. A total of 6479 letters of thanks have been received from overseas and translated at NEA headquarters. The original and a translation are sent to local education associations and individuals throughout the country who

contributed. A complete file of all of these letters is being kept as an historical record.

CLEARINGHOUSE ON CHILD LIFE RESEARCH—A clearing house for research in child life has recently been established in the Children's Bureau as an aid to research workers in keeping abreast with studies in progress. The Children's Bureau is a unit of the Social Security Administration, Federal Security Agency. The clearinghouse has been set up in response to numerous requests from research workers and professional organizations who believe that such a center will promote collaboration and interchange of information on current research in the various fields affecting child life. Lack of a central clearinghouse has in the past been a handicap to many investigators because there has been no one place where they could find out about current projects in their own fields or related ones. Research workers agree that the availability of such information will encourage more co-operative planning, as it can be a communicating device for investigators in different specialties. The clearinghouse will provide a systematic way to keep professional people informed about research in progress, and to bridge the time-gap between completion and publication of work.

The establishment of a clearing house in the Children's Bureau grew out of a series of conferences held during the past year to review what is going on in research in child life, what the gaps are, and how the needs for research can be met. Representatives of many fields in child life research participated in one or more of these conferences. These representatives recommended that the Children's Bureau develop a center for information about projects pertaining to children and mothers being undertaken by one or more of the various disciplines. In mid-September an advisory committee met with the Children's Bureau staff to help work out the best way to get the clearinghouse started. The clearinghouse will canvass investigators in various fields for reports of studies in progress, including collections of unpublished data. A bulletin will be released in 1949 to inform research workers about on-going research in child life. The clearinghouse will provide information to research workers on request.

The Children's Bureau emphasizes that the clearinghouse will not attempt to summarize or indicate the conclusions of research projects, but will furnish accounts of the nature of projects as reported to it by individuals or organizations. Many researchers will be asked to prepare their own brief descriptive statements about projects, on report forms, and results or conclusions will not be included except as may be desired by the investigator himself. Participation will be voluntary, but it is hoped that co-operation will be extensive, as the value of the clearinghouse will be dependent upon its scope and coverage. Inquiries may be directed to Dr. Clara E. Cuncell, Director, Clearinghouse, Children's Bureau, Federal Security Agency, Washington 25, D. C.

RADIO GUIDE FOR EDUCATORS—To help improve the use of radio in schools throughout the United States, a joint committee of educators and manufacturers has released a set of standards to guide school administrators in selecting appropriate radio equipment. "Classroom Radio Receivers,"—a 40-page brochure published by the Radio Manufacturers Association in co-operation with the Office

of Education, Federal Security Agency—is available without charge from the Radio Manufacturers Association, 1317 F Street, N.W., Washington, D.C. or the Radio Section of the Office of Education, Federal Security Agency, Washington 25, D.C. In an explanatory foreword to the booklet, the joint committee states: "The classroom radio receiver serves many purposes. It is the rural student's airway path to recognized centers of urban learning, and it is equally the city student's opportunity to learn from his rural neighbor. The radio is more than a device for equalizing educational opportunity. It offers advantages to all students in the enrichment and vitalizing of instruction." School authorities, confronted with the problem of selecting suitable classroom radio receivers, the committee advises, should analyze four factors: first, the educational objectives of classroom audio activities; second, the specific broadcast programs that are or will be available for classroom use; third, the method of transmission (FM, AM, and shortwave) offering the desired programs; and, finally, the type of classroom radio receivers needed to tune these programs.

STATUS OF STUDENT UNDER SELECTIVE SERVICE—How do high school and college students fare under the Selective Service Act of 1948? What exemptions do they have under the new draft law? Following are excerpts from the law which answer these questions for teachers and students:

"Any person who, while satisfactorily pursuing a full-time course of instruction at a high school or similar institution of learning, is ordered to report for induction under this title prior to his graduation from such school or institution, shall, upon the facts being presented to the local board, have his induction under this title postponed (A) until the time of his graduation therefrom, or (B) until he attains the twentieth anniversary of his birth, or (C) until he ceases satisfactorily to pursue such course of instruction, whichever is the earliest. The induction of any such person shall not be postponed under this paragraph beyond the date so determined.

"Any person who, while satisfactorily pursuing a full-time course of instruction at a college, university, or similar institution of learning, is ordered to report for induction under this title, shall, upon the facts being presented to the local board, have his induction under this title postponed (A) until the end of such academic year or (B) until he ceases satisfactorily to pursue such course of instruction, whichever is the earlier. Nothing in this paragraph shall be deemed to preclude the President from providing, by regulations prescribed under subsection (h) of this section, for the deferment from training and service of any category or categories of students for such periods of time as he may deem appropriate."

Copies of the Selective Service Act are available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., as Public Law 759—80th Congress, price 25 cents each.—*School Life*, U. S. Office of Education.

THE COMMUNITY SCHOOL—The National Conference of Professors of Educational Administration which met in Madison, Wisconsin, listed 16 descriptive statements regarded by the conference as distinctively and essentially characteristic of the community school as follows:

1. The community school seeks to operate continuously as an important unit in the family of agencies serving the common purpose of improving community living.
2. The community school shares with citizens continuing responsibility for the identification of community needs and the development of subsequent action programs to meet these needs.
3. The community school begins its responsibility for better living with the immediate school environment.
4. The curriculum of the community school is sufficiently comprehensive and flexible to facilitate the realization of its purpose.
5. The community school program is dynamic, constantly changing to meet emerging community needs.
6. The community school makes full use of all community resources for learning experiences.
7. The community school develops and uses distinctive types of teaching materials.
8. The community school shares with other agencies the responsibility for providing opportunities for appropriate learning experiences for all members of the community.
9. The community school recognizes improvement in social and community relations behavior as an indication of individual growth and development.
10. The community school develops continuous evaluation in terms of the quality of living for pupils, teachers and administrators; for the total school program; and for the community.
11. The pupil-personnel services of the community school are co-operatively developed in relationship to community needs.
12. The community school secures staff personnel properly prepared to contribute to the distinctive objectives of the school; facilitates effective work and continuous professional growth by members of the staff; and maintains only those personnel policies which are consistent with the school's purposes.
13. The community school maintains democratic pupil-teacher-administrator relationships.
14. The community school creates, and operates in, a situation where there is high expectancy of what good schools can do to improve community living.
15. The community school buildings, equipment, and grounds are so designed, constructed, and used as to make it possible to provide for children, youth, and adults those experiences in community living which are not adequately provided by agencies other than the school.
16. The community school budget is the financial plan for translating into reality the educational program which the school board, staff members, students, and other citizens have agreed upon as desirable for their community.

The Book Column

Professional Books

COX, P. W. L.; DUFF, J. C.; and McNAMARA, MARIE. *Basic Principles of Guidance*. New York 11: Prentice-Hall. 1948. 450 pp. \$3.75. The authors present guidance in its many aspects, stating that it "cannot be the exclusive prerogative of guidance specialists any more than it can be the exclusive province of the school." This book offers the principles of guidance that are basic to the practice of all associated with this field.

JOHNSON, B. L.; LINDSTROM, ELOISE; *et al.* *The Librarian and the Teacher in General Education*. Chicago 11: American Library Association. 1948. 81 pp. \$2.00. The book reports library-instructional activities at Stephens College, Columbia, Missouri. It describes the liaison at Stephens between library and teaching staffs in the general educational program which has been in effect since 1932. In *Vitalizing a College Library* (1939, A.L.A., \$2.00), Dean Johnson described the setup and over-all program at Stephens. The present book covers in greater detail specific projects and actual experience in the integration of the library with instruction in various subject areas.

LIEBMAN, J. L. *et al.* *Psychiatry and Religion*. Boston 8: The Beacon Press. 1948. 222 pp. \$3.00. This volume contains a report of the symposium or conference of religious leaders of New England and distinguished psychiatrists and psychoanalysts. It is concerned with the attainment of a new maturity by the men and women of our age. Following an introduction by A. A. Goldman, broad topics covered are: "Where Psychiatry and Religion Meet and Part," "Hospital Care of the Mentally Ill," and "The Individual and His Environment."

MAGOUN, F. A. *Love and Marriage*. New York 16: Harper and Brothers. 1948. 386 pp. \$3.50. This book makes a departure from the standard treatment of marital relations. Shifting the emphasis that has generally been placed on sex factors, it directs attention to the whole challenge of making the most out of married life. Professor Magoun, who writes from many years of successful teaching experience, takes a wise and understanding view of the problems facing modern husbands and wives. He is deeply aware of the psychological and social importance of a well-adjusted family life and makes clear the need for co-operation and willingness to work together both for the happiness of the parents and for the sake of their children's emotional stability and growth.

RECK, W. E., editor. *College Publicity Manual*. New York 16: Harper and Brothers. 1948. 256 pp. \$3.00. Here is a new working manual for all those concerned with public relations in the educational field. Every important aspect of the process of building and directing college publicity is dealt with in this handbook. Emphasizing specific techniques rather than general public relations policy, it analyzes in helpful detail the sources of news, how to gather and present publicity effectively, outlets and the placing of news, and the over-all function of the publicity office. Programs illustrating the uses of publicity in such typical college activ-

ities as fund-raising and athletic events make the book especially useful as a reference work.

Books for Pupil and Teacher Use

BECKLEY, D. K., and LOGAN, W. B. *The Retail Salesperson At Work*. New York 18: McGraw-Hill Book Co. 1948. 354 pp. \$2.20. This new book is an introductory textbook for young people who plan careers in retailing. It provides information about the salesperson's job, based on the experiences of others, and stresses both the techniques of selling and the information needed in handling a new job in a store. Specific treatment is given to problems of getting along on the job. Rules and regulations for salespeople are presented, with explanations of why they are necessary.

Suggestions are included regarding best procedures for finding good jobs in retailing and for dealing with the problems likely to be encountered in getting along with superiors and fellow workers. The retail salesperson's job is viewed as including much more than the psychology of selling and its practical applications. Each chapter contains ten or more discussion questions and several projects, developed from extensive teaching experience. The liberal number of drawings and photographs is a special feature. A *Workbook* and a *Teacher's Manual* are available.

BENGE, JEAN and EUGENE. *Win Your Man and Keep Him*. Chicago 11: Windsor Press. 1948. 196 pp. \$3.00. This book explains the important ingredients in a well-balanced life. It shows why living habits, health, and charm are such decisive factors. There are fourteen clever, scientifically-planned tests telling how any girl can estimate her temperament, compatibility, popularity, culture, etc. Because of the private and confidential nature of some of these, tissue masks are provided so that they may be pulled out and destroyed after taking the tests.

BISHOP, ROBERT, and CRAYFIELD, E. S. *Russia Astride the Balkans*. New York 16: Robert M. McBride. 1948. 287 pp. \$3.50. It is clearly evident that there is a carefully worked-out pattern controlling each phase of Russian policy in European power politics. It was first executed in Rumania, the proving ground of aggression; later it was applied with slight deviation to other countries over-run by the Soviets. This book is an eye-witness account of that policy set in effective motion in Rumania.

The authors spent four years in that country as intelligence operatives, two of them under the Fascist dictatorship before the war's end and two under the Soviet heel after it. They give the first dramatic behind-the-scenes picture of the surprise plot that ended Antonescu's treasonable partnership with Hitler. Here, too, are the exciting inside stories of the ground being prepared by the Soviet fifth columnists, of the Russian horde moving in after the retreating Germans and through fake elections taking over the Rumanian government, the terrorizing of the population, armed bands with packs of dogs hunting the democrats who had fled to the Carpathian forests, the slave labor deportations of whole populations, the exile of vast numbers of innocent people to Siberia in cattle cars, and the billion-dollar looting of a nation rich in natural resources.

- BROWN, VINSON. *The Amateur Naturalist's Handbook*. Boston: Little, Brown, and Co., 34 Beacon St. 1948. 489 pp. \$3.50. This book is for all who like the out-of-doors and would like to know more about the many interesting things they see. The author goes beyond an explanation of what is to be seen and has attempted to instruct the would-be naturalist to train himself in scientific methods by a series of easy steps so that he is "over the hump" to accomplishment almost before he realizes what has happened to himself. The handbook is divided into sections of graded difficulty for the beginner up to the advanced naturalist with a final chapter on "Becoming an Explorer-Naturalist." Each of these sections is further divided into study of plants, animals, minerals and rocks, and climate.
- DALY, MAUREEN, editor. *My Favorite Stories*. New York 16: Dodd, Mead, and Co. 1948. 241 pp. \$2.75. The stories are equally divided between the loved "classics," semi-action stories, and tales which are just fun to read. The authors include Sinclair Lewis, Ruth Suckow, Jessamyn West, Albert Payson Terhune, Graeme and Sarah Lorimer, and Dorothy Baker. Each selection has a personal introduction by Maureen Daly.
- DeLEMONS, PEDRO. *Creative Art Crafts*. Worcester, Mass.: The Davis Press. 1948. 88 pp.—80 illustrated. \$4.75. This book completes a series of three books on related craft subjects by the same author. The three main sections of the book are: Weaving and Textiles; Pottery and Cement Craft; and Puppetry and Stagecraft. Each main section is sub-divided to cover allied crafts related to the main subjects. The "Weaving and Textiles" section illustrates and explains drawings and photographs, how to weave with a variety of materials, and how to make your own loom. It also explains and illustrates step-by-step methods for raffia, splint, and basketry weaving. The "Pottery and Cement Craft" section gives many design ideas and step-by-step instructions for making and firing such popular items as fireplace tiles, Indian pottery, color cement flagstones, sculptured animal forms, and mosaic tiles. And a detailed drawing with directions tells how to make a simple kiln for home use. The "Puppetry and Stagecraft" section gives information and ideas for making and using a host of items in this popular field. It gives details for making puppets, puppet stages, shadow plays, and wigs and masks; and describes and illustrates pageantry and costuming for many varieties of plays. In addition to the three main sections, the author has included a few pages on making novelty jewelry and sand-table projects.
- DOWNEY, FAIRFAX. *The Seventh's Staghound*. New York 16: Dodd, Mead, and Co. 1948. 230 pp. \$2.50. The dashing, legendary General Custer and the gallant 7th Cavalry he led in the Indian Wars live again in the pages of this story. Following history closely, it rises to a stirring climax in the Battle of the Little Big Horn, presented with all this fine author's skill in combining fast action with a depth of feeling.
- ESTES, ELEANOR. *The Sleeping Giant*. New York 17: Harcourt, Brace, and Co. 1948. 101 pp. \$3.00. The book contains three stories told with humor and imagination.
- FARALLA, DANA. *Dream in the Stone*. New York 18: Julian Messner. 1948. 234 pp. \$3.00. Erik, Baron Thole, was possessed of a devil that made him destroy every-

thing around him. Only two things had meaning for him, Maren, the stormy woman who vexed his spirit and to whom he was irresistibly drawn, and his glorious golden stallion, Sleipnir, named for the thundering steed of the god Odin. Sleipnir was almost as fabulous as his namesake, and it was his spirit that carried Erik and Maren across two centuries to become part of the lives of an imaginative boy and girl, long after Sleipnir, his owner, and their castle had disappeared into the sea.

Jorgen Anders and his cousin, Lene, were children of the sea, born and raised in a fishing village in Jutland. They loved the sea and the legends that surrounded Gannets' Rock, the granite island that rose out of the sea like an enchanted castle. Gifted with great perception, they heard the beat of Sleipnir's hoofs and saw the beautiful golden horse they called Gyldeu racing across the sand dunes. One stormy night they followed him and his mysterious rider to the castle on Gannets' Rock and to the passionate, lovely girl who lived there.

GARST, SHANNON. *Buffalo Bill*. New York 18: Julian Messner. 1948. 214 pp. \$2.75. This is the story of the life of Buffalo Bill Cody, the symbol of the Golden West. As a scout and plainsman, he helped to build the West; and, through his famous Wild West Shows, he gave the world an epic pageant of a period in U. S. history that has never been equaled. Buffalo Bill was a tremendous and colorful personality who left his imprint over our entire country.

GOETZ, DELIA. *Other Young Americans*. New York 16: William Morrow and Co. 1948. 255 pp. \$3.50. This book was written in response to the questions that high-school students ask Miss Goetz about their contemporaries south of the border. How do they live? What are their homes like, their schools, and sports and jobs, their clothes and food and holidays? How do they go about having dates? And what do they think of us? Here are the answers, presented with accuracy, humor, and understanding. Social customs which differ from our own are made clear by example. When in doubt, shake hands is good advice for the visitor. Dishes almost too tempting for a hungry reader are described, as well as touching miracle plays that have come down the centuries unchanged.

HERZBERG, M. J. *A Treasure Chest of Sea Stories*. New York 18: Julian Messner. 1948. 357 pp. \$3.00. Here are twenty exciting, red-blooded stories of the sea, of sailing ships and iron ships, of heroism and bravery, storm, shipwreck and desert islands, tall tales and sailors' yarns. Every one of these twenty stories is written by men who know the sea and are known to every man jack who does his sailing on the wind-swept deck of a boat, among them—Jack London, James Norman Hall, Alfred F. Loomis, Arthur Mason, Albert Richard Wetjen, and W. W. Jacobs. Here are sea stories bursting with thrills, suspense, and danger.

HOWE, GEORGE. *Economics for the Practical Man*. Chicago 5: Wilcox and Follett Co. 1948. 160 pp. \$2.00. For everyone interested in and puzzled by the many complex economic problems now facing the world, this book offers an easy-to-read, thought-provoking basis for better understanding. Although conceived by the author as a textbook in economics, it is written in a simple, clear, and straightforward style which makes it popular with every type of reader. The author's purpose has been to show by reason and example just how the principles of eco-

nomics affect the particular problems and job of the practical man of affairs, whatever his place in the world. It is addressed as much to stenographers and factory hands as to executives, as much to retired businessmen and housewives as to readers actively employed. It is for everyone who needs clearer insight into the workings of the economic system of which we are all so much a part. Among the topics treated in the book are Rent, Wages, Government, Finance, Monopolies, Money, Banking and Credit, Business Cycles, and Foreign Exchange. Important points are illustrated by means of graphic charts.

HUNGERFORD, E. B. *Emergency Run*. Chicago 5: Wilcox and Follett Co. 1948. 263 pp. \$2.50. This is the story of the *Oregon's* triumphant race against time, the story of a boy and a ship, the story of the battle of Santiago Harbor. It is second in the author's series of books about famous episodes of American naval history. The first book in this sea-adventure series is *Fighting Frigate*, a tale of the frigate *Constitution*. The next one will be the inspiring story of John Paul Jones and the *Bon Homme Richard*.

LASSER, J. K. *How Tax Laws Make Giving to Charity Easy*. New York 10: Funk and Wagnalls Co. 1948. 120 pp. \$3.00. This book will give those seeking contributions for charitable purposes the particular facts about our Federal tax structure designed to make giving to charity easy. It is also written for people who want to learn how to make their contributions wisely.

LAWRENCE, MILDRED. *Peachtree Island*. New York 17: Harcourt, Brace, and Co. 1948. 224 pp. \$2.25. Nine-year-old Cissie had lived with each of three aunts in turn ever since she could remember. But one summer their plans were changed, and Cissie was sent off to Uncle Eben whom she had never met. The story takes Cissie through the year with Uncle Eben—helping chubby Mrs. Halloran, the housekeeper, to make apple butter, caring for the peach orchards, fishing through the ice in the lake, making friends with her schoolmates and with the little girl who lived in a bleak old house on a nearby island. It is a happy story, filled with warmhearted gaiety and good times, and the people are real people.

LEEMING, JOSEPH. *It's Easy to Make Music*. New York 17: Franklin Watts, Inc. 1948. \$3.00. The author shows how anyone of any age, who has enthusiasm and can read, can learn to play tunes on a great variety of musical instruments. Among the instruments covered are the piano, violin, guitar, banjo, mandolin, and ukelele. Wind instruments include the saxophone, trumpet, cornet, clarinet, the humble harmonica, fife, and "sweet potato," drums and traps, and the xylophone.

MACPHERSON, BYRON. *Picturesque Washington*. Seattle 4, Wash.: Pioneer Publishing Co. 1945. 44 pp. \$2.00. Here is a large format illustrated (240 original drawings) book which describes 57 interesting places and things in this state. There are also included maps, interesting highlights, famous people, Indian signs and symbols, and facts about each county of the state.

MAGINLEY, C. J. *Toymaker's Book*. New York 17: Harcourt, Brace, and Co. 1948. 162 pp. \$2.50. In his second book, the author of *Historic Models of Early America* provides clear instructions, accompanied by simple diagrams, for making a variety of amusing toys and games. There is a train with its full complement of cars

of all types which can be coupled and uncoupled. There are various kinds of trucks—moving vans, dump trucks, and trailers—among them. There are toys, such as the whirlingig and the see-saw, which go into action when pulled along. There is an entire section on how to build and completely furnish a salt-box doll house. A toy telephone, a steam shovel, a clothespin bowling game, a merry-go-round, and a ferris wheel are also included. Made from wood and painted in gay colors, these will make attractive gifts. They require only simple tools and inexpensive materials, and offer the craftsman much pleasure in the making of these many and varied types of toys.

NESBITT, HENRIETTA. *White House Diary*. Garden City, New York: Doubleday and Co. 1948. 314 pp. \$3.00. "There will be five thousand to tea . . ." "The President of Iceland will have breakfast at nine in his room." These are the sort of messages Mrs. Henrietta Nesbitt took in stride during her eleven years in the White House—one of the largest, most complicated, and most fascinating households in America. Her story is a succession of intimate anecdotes of the great and the near-great—Alexander Woollcott, Paderewski, the King and Queen of England, Jose Iturbi, Winston Churchill, and of course the Roosevelt family itself. It is also a salty and sprightly record of the world's most demanding job of housekeeping. The flow of guests through the White House was a constant source of glamour, interest—and trouble. It was the trouble that Mrs. Nesbitt took care of. Last-minute banquets, constant worries over security, juggling of ration stamps during the difficult war days, personality clashes, guests who never arrived, guests who wouldn't leave—these were all her problems.

POTTER, R. D. *Young People's Book of Atomic Energy*. New York 16: Dodd, Mead and Co. 1948. 181 pp. \$2.50. A completely revised edition of a justly popular and valuable book on a most important subject—atomic energy. The author has brought all his data absolutely up to date in the light of recent revelations and gives a careful estimate of the wonderful peacetime potentialities of this great power for good as well as evil. Ever since the atomic bomb burst in an explosion that shook the world, millions of the young generation, who have not yet studied Atomic Physics, have sought a comprehensive understanding of this new and fascinating subject. For them, the adult books on the subject have been too technical; and it is for this reason that the author, who is also a trained scientist and teacher, and who was an observer at Bikini Atoll, as well as a writer of scientific articles that are read weekly by more than 16,000,000 readers, has specially prepared this book.

ROBERTSON, LILIAN. *Runaway Rocking Horse*. New York 17: Harcourt, Brace, and Co. 1948. 36 pp. A child's story of a runaway rocking horse that wanted to be a policeman and work on a merry-go-round.

SALTEN, FELIX. *Favorite Animal Stories*. New York 18: Julian Messner. 1948. 253 pp. \$3.00. The beloved author of *Bambi*, *Jibby*, *The Cat*, and other stories of field and forest and his own collection of favorite animal stories by authors whose spirits were kindred to his own. Fourteen of his favorites have been collected in this volume—all tales that he himself read over and over again for his own pleasure and for the delight of his own children.

- SKILLIN, M. E.; GAY, R. M.; *et al.* *Words Into Type*. New York 1: Appleton-Century-Crofts. 1948. 607 pp. \$5.00. This book sets forth succinctly, clearly, and fully the present-day rules and standards of usage covering every step in the preparation of printed materials, from the manuscript to the finished product. The subjects covered include all those dealing with the mechanical perfection of manuscript and type matter—manuscript preparation, copy editing, typography and illustration, proofreading, makeup, and printing style. In addition, the book considers numerous related matters, among them the responsibility of the author for front matter and indexes; the laws of copyright and libel; the typography of such special literary forms as legal, religious, and scientific writing; the composition of principal foreign languages; grammar and sentence structure; and the correct use of words, including spelling, words frequently misused or confused, and a comparison of British and American usage. Also included are glossaries of printing and grammatical terms, and of foreign phrases. The whole is logically arranged for easy reference, and the index is especially helpful.
- SMITH, IRENE. *The Santa Claus Book*. New York 17: Franklin Watts, Inc. 1948. 234 pp. \$2.50. This is a collection of stories in which Santa Claus is the exclusive hero. Conceived as the result of many, many demands heard from thousands of children Christmas after Christmas in the public library, this book is an effort to answer this need. This book gives the favorite wonder tales, poems that jingle like sleigh bells, adventures of boys, girls, fairies, brownies, and animals with Santa Claus. Among the authors represented in this group are Rachel Field, Clement C. Moore, Kate Seredy, Ruth Sawyer, Eleanor Farjeon, and Thomas Bailey Aldrich.
- STEVENS, W. O. *Young People's Book of Famous Warships*. New York 16: Robert M. McBride. 1948. 262 pp. \$2.75. This account of the great fighting ships of all time begins with the stories of the navies of ancient Crete and Egypt and carries the young reader down through successive periods of naval history to the present day. Here are the stories of the unnamed Viking galleys, Sir Francis Drake's *Revenge*, Lord Nelson's *Victory*, the American frigate *Constitution*, the first iron-clads *Monitor* and *Merrimac*, the Confederate ship *Kearsarge*, the great ships of World War II—*Enterprise*, *Missouri*, and *Boiser*, the ill-fated *Graf Spee*, and dozens of other fighting vessels which have written their exploits on the pages of history. Here, too, are stories of commanders who have engraved their names in the naval hall of fame, men such as Sir Richard Hawkins, Lord Howe, Isaac Hull, Stephen Decatur, David Farragut, and Admirals Halsey, Mitscher, and Nimitz.
- STEVENSON, R. L. *Treasure Island*, adapted by M. G. Livingston. New York 10: Globe Book Co. 1948. 314 pp. \$1.20. This is a simplified edition of this well-known classic. Every effort has been made to preserve as much of the style of the original as possible.
- SUTTON, A. A. *Design and Makeup of the Newspaper*. New York 11: Prentice-Hall. 1948. 499 pp. The purpose of this book has been to bring together significant information that is essential to an understanding of the basic problems involved in the design and makeup of the newspaper. Not only has it been planned as a

textbook for use in colleges and universities giving instruction in journalism, but also for practicing newspapermen and others interested in developing more proficiency in the subject. Most of the material presented also is applicable to magazines, house organs, and other types of publications directed toward reading publics, and should be of service to workers in these related fields. The book is composed of 16 chapters whose titles are: A Brief History of Printing; Printing Types: Their Structure, Design, and Classification; Some Popular Type Faces; Elements of Hand Composition; Principles of Design and Layout; Copy-Fitting and Estimating; Method of Proofreading; Type-Casting Machines; Kinds of Printing Plates; Styles of Printing Presses; Headlines and Headline Schedules; Front-Page Makeup; Inside-Page Makeup; The Editorial Page; Other Special Pages; and From Infant to Giant.

TURLINGTON, CATHERINE. *Three To Make Ready*. New York 17: Vanguard Press. 1948. 313 pp. \$3.00. This is the story of three live teen-age sisters. Just what to expect of them next is naturally unpredictable. The story as told is human and true to life. The mother tells the story as it happened in her home.

ULLMANN, FRANCES. *Girl Alive!* Cleveland 2, Ohio: World Publishing Co. 1948. 234 pp. \$2.00. The author tells the girl how to make the most of what she has, how to get the best results with hair, skin, and figure. She gives tips on how to get along with boys, how to be a success at school (and not just in studies), how to live happily with the family and with others. She advises the girl who has trouble choosing the right clothes to suit her figure, and the girl who thinks she can't have fun at a party.

VERRILL, A. H. *The Young Collector's Handbook*. New York 16: Robert M. McBride. 1948. 308 pp. \$2.75. As a satisfying pastime that provides a perpetual fund of enjoyment for young people, nothing exceeds the hobby of collecting. There are hundreds of things to collect, each one supplying the excitement of discovery and the satisfaction of possession. To aid the young collector in finding the articles that will most appeal to his tastes and yield him the most fun, this guide to collecting will be invaluable. It suggests what to collect, where to find it, and how best to preserve and display for himself and his friends the articles and specimens after they have been acquired.

Pamphlets for Pupil and Teacher Use

Annual Report of the Bureau of Co-operation with Educational Institutions. Ann Arbor: Univ. of Michigan. 1948. 41 pp. Covers the year ending June 30, 1948, deals with accreditation of secondary schools, and contains a list of secondary schools accredited by the University for the year 1948-49.

BAKER, GRETTA. *It's Not All in Books*. New York 22: Society for the Prevention of World War III, Inc., 515 Madison Ave. 1948. 8 pp. Mimeo. Free. A 15-minute radio script. Others will appear during the school year.

The Berlin Crisis. Wash. 25, D. C.: Supt. of Doc. 1948. 69 pp. 20c. A report on the Moscow discussions.

BETTS, E. A. *Reading: Differentiated Instruction*. Philadelphia 22: Reading Clinic, Department of Psychology, Temple University. 1948. 9 pp. 35c. A discussion of procedures. Also contains a bibliography.

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BLAIR, G. M. *Educational Psychology, Its Development and Present Status*. Urbana: Univ. of Ill., College of Education, Bureau of Research and Service. 1948. 34 pp. Traces the early development of the course; examines studies which have been made of the aims, content, methods of teaching, and administration of the course; and points out desirable future trends.

CAREY, J. C. *The Role of Uprooted People in European Recovery*. Washington 6, D. C.: National Planning Association, 800 21st St., N. W. 1948. 99 pp. \$1.00. This is a fifth in the series of reports on European Reconstruction which has been issued by the NPA Committee on International Policy. The author states that there are millions of potentially productive, but idle and homeless Europeans, who are a "dead weight on the ailing economy of Europe" and a "drag on the European Recovery Program." The report recommends that comprehensive plans, co-ordinated with the over-all planning for European recovery, should be put into effect promptly to help them find homes and fit them for constructive work in rebuilding Europe.

Chandler, Arizona, *A Report of an Investigation*. Wash. 6, D.C.: NEA. 1948. (Oct.). 20 pp. An example of the need for fair dismissal procedures in school systems.

Counseling Is a School Service. Philadelphia 3, Pa.: School District of Philadelphia, 21st and the Parkway. 1947. 44 pp. A report of the development of five years of counseling service of the Philadelphia Public Schools. As educators seek to fulfill the larger objectives of developing emotional health and social maturity, counseling will be increasingly relied upon as an essential aid in adapting education to individual needs, interests, and abilities, and in preventing social problems by helping children make satisfactory adjustment to life.

Denver Serves Its Children. Denver, Colorado: Department of Instruction, Denver Public Schools. 1948. 60 pp. A handbook of school and community resources for the use of parents and teachers.

First Report to Congress of the Economic Co-operation Administration. Wash. 25, D. C. The Economic Co-operation Adm. 1948. 105 pp. Covers the period from April 3 to June 30, 1948.

GILBERTSON, H. W. *Educational Exhibits*. Wash. 25, D. C.: Supt. of Doc. 1948. 42 pp. 25c. A manual on how to prepare and use exhibits.

GILL, DON. *A Rated List of Three-Act Plays*. Howell, Michigan: The author. 1948. 18 pp. Mimeo. \$1.00. This list of about 400 three-act plays has been compiled as a result of a questionnaire sent to nearly five hundred high-school principals and play directors. Among other questions asked were these two: "What play do you consider the best you have ever seen or the best you have ever produced in your school or any other high school of comparable size?" and "Will you please list the titles and rate as excellent, good, fair, or poor the three-act plays produced in your school within the last two or three years?" This list represents the answers to these two questions. It includes selections and opinions of superintendents, principals, and play directors.

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from 125-324 students, and a Class D high school having less than 125 students. An asterisk (*) before the title of a play indicates that one individual considered it the best high-school play ever seen or produced.

Guiding Democratic Learning. Chicago: Wells High School, 936 N. Ashland Ave. 1948. 20 pp. A seventh-grade curriculum brochure. Illustrated with scenes from the school's classrooms.

HEATON, HERBERT, and JOHNSON, ALVIN. *Socialism in Western Europe.* New York 16: Foreign Policy Assn., 22 East 38th St. 1948. 64 pp. 35c. Surveying the trend to the left in postwar Europe, Mr. Heaton points out some of the difficulties encountered by public ownership programs in Britain, France, and other nations of the West. The pamphlet also contains a short second article by Alvin Johnson, in which the author warns against undue American interference in the social plans of the western democracies.

How To Build a Safer Home. New York 19: Good Housekeeping Bulletin Service. 1948. 28 pp. 35c. Discusses features in the design, construction, and equipment of houses which are overlooked by home owners and architects.

ICS Catalog, 1948-49. New York 19: Institutional Cinema Service, Inc., 1560 Broadway. 1948. 128 pp. A catalog of recreational and educational 16-mm. sound films available through this company. Shows rental charges and lists films with annotations and number of reels.

Indiana and Midwest School Building Planning Conference. Bloomington: Univ. of Indiana Bookstore. 1948. 72 pp. \$1.00. The proceedings of the annual school building conference held by the School of Education, Indiana University.

Insurance Committee Report on School Fire Insurance, 1938-45. Bul. No. 11. Kalamazoo, Mich.: The Assn. of Public School Business Officials. 1947. 40 pp. A report on a second study of fire insurance by this Association.

LAMBERT, CLARA. *Understand Your Child—Ages 6 to 12.* New York 16: Public Affairs Committee, 22 East 38th St. 1948. 32 pp. 20c. The pamphlet offers suggestions to be used, not as an infallible guide for on-the-spot emergencies, but for long-term guidance in helping your children to develop fully.

Legislative Report. No. 4. Wash. 25, D. C.: U. S. Dept. of Labor, Bureau of Labor Statistics. 1947. Mimeo. A current summary of state laws regulating the labor unions.

Local Education Associations at Work. Wash. 6, D. C.: Nat. Ed. Assn. 1948 (Oct.). 40 pp. 50c. A survey of activities and an interpretation of practice.

Partnership of Home and School. Newton, Mass.: The School Committee. 1948. 74 pp. The 108th annual report of the Newton Public Schools.

Publications of the American Council on Education, 744 Jackson Place, N. W., Wash. 6, D. C.

Exploring Individual Differences. 1948. 118 pp. \$1.50. A report of the Invitational Conference on Testing Problems held in New York City, November 1, 1947.

Goals for Higher Education in the Pacific Coast States. 1948. 18 pp. 30c. The report of a Conference on Higher Education held at Berkeley, California, on July 1, 2, and 3, 1948.

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The Teacher As Counselor. 1948. 54 pp. 75c. A report prepared for the Committee on Student Personnel Work.

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Your Prosperity and Mine—6 pp.

Report of the Temporary Commission on the Need for a State University. Albany 1, New York: State Education Dept., Bureau of Publications. 1948. 56 pp. A report by the Commission to the governor with conclusions and recommendations.

Responsibility. New York 20: National Broadcasting Co., 30 Rockefeller Plaza. 1948. 38 pp. Free. A working manual of NBC program policies.

ROLLINS, CHARLEMAE. *We Build Together*. Chicago 21: The National Council of Teachers of English. 1948. 76 pp. 65c. A reader's guide to Negro life and literature for elementary and high-school use. Also contains a bibliography.

Selecting a Building Lot. Stockton, Calif.: Unified School District. 1946. 14 pp. Mimeo. A 12-grade teaching unit including a 3-page score sheet for a four or five family house plan.

Undergraduate Recreation Curricula in 35 Colleges and Universities. New York 10: National Recreation Assn. 1948. 26 pp. Mimeo. A summary report on information concerning 35 colleges and universities offering under-graduate majors in recreation.

USNSA. Madison 5, Wis.: U. S. National Student Assn., 304 N. Park St. 1948. 40 pp. 15c. The program and report of the First National Student Congress held on Aug. 23-28, 1948, at the University of Wisconsin.

You and Your Railroads. Washington 6, D. C.: Assn. of American Railroads. 1948. 24 pp. Free. A graphical presentation with text on railroads.

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